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Part 1

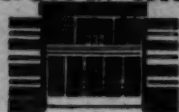
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JULY 1952, Part I

No. 4

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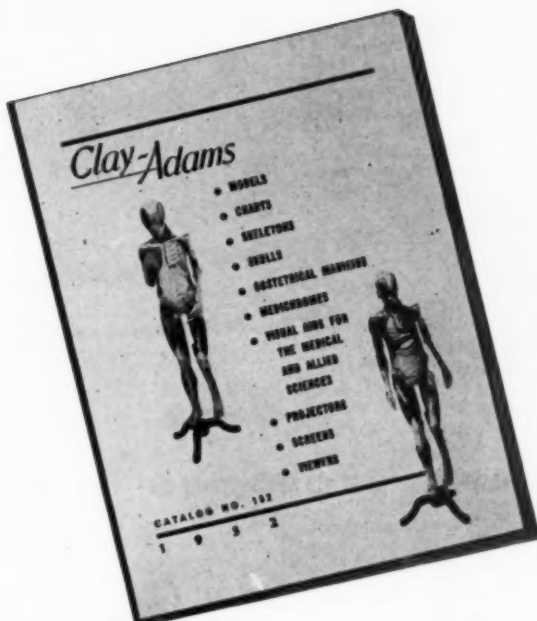
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... an Abbott Report to the Medical Profession

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Those presently engaged in the rapidly mushrooming research with radioactively-tagged compounds know that it is far too early to make any such dramatic prophecy... that only time and experience, in staggering amounts, will determine the full therapeutic potential of the isotopes.

What lay publications may be inclined to overlook is that radioactivity offers three great avenues of exploration and application in the field of medicine. First, as a tracing device, tagged to specific compounds, it is capable of ferreting out and evaluating processes too complicated to be followed in any other way...

Radioisotopes have already made it possible to develop an entirely new technique for studying basic body metabolism—for investigating the synthesis, utilization, transport and breakdown of body components. The biochemist is daily learning more about the functions of fatty acids, amino acids, nucleic acids, antigens, antibodies, vitamins, dyes, alkaloids, glycosides, estrogens... The fate of potent

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But this is fundamental research. And while the facts, and the principles that will surely follow them, are becoming increasingly important to you now, they cannot be applied generally for some time. Where, then, do the isotopes fit into the more practical, present-day scheme of medicine?

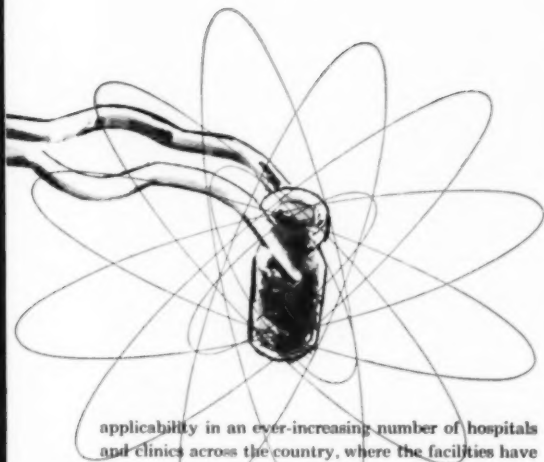
Part of the answer is in the second application of the isotopes—medical diagnosis, considered by many investigators as the field where isotopes will ultimately reach their highest point of value...

Radioactive isotopes are essentially the same chemically (generally they contain one extra neutron in the atomic nucleus) as their stable counterparts. Thus, through chemistry, they may be incorporated into other compounds, carry out the same functions as stable compounds, have the same affinities—and yet serve as a source of ionizing rays.

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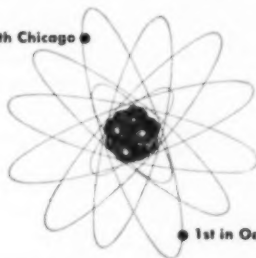
Radiiodine is now widely used in treating thyroid cancer and its metastases. It is also considered highly valuable in hyperthyroidism, especially when the patient is sensitive to antithyroid drugs or the case is complicated by heart disease. Radiophosphorus has proved beneficial in polycythemia vera and certain leukemias. Radiogold has been reported successful in isolated instances when implanted in colloidal state into ovarian or prostate tumors. Intravenously, gold has been useful in chronic leukemia.

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1. *Angiology* 3:1 (Feb.) 1952.

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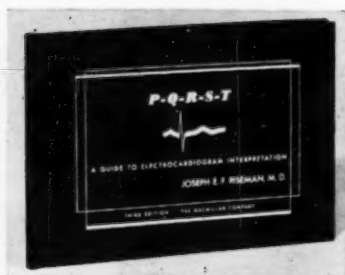
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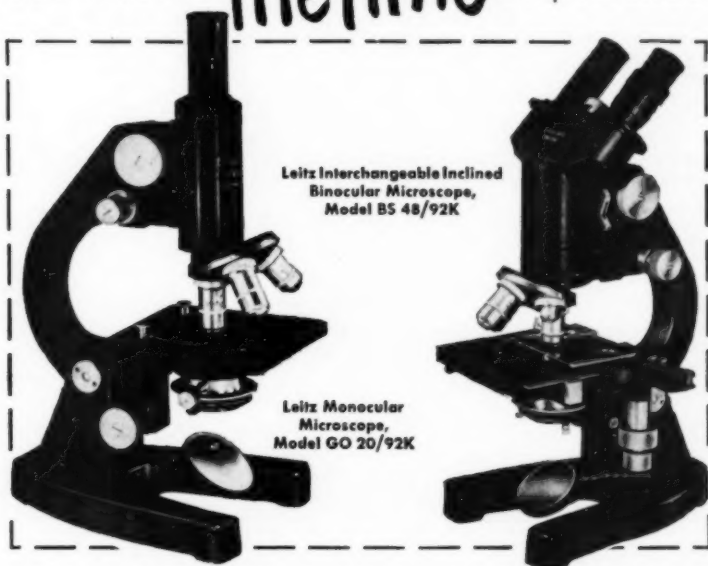
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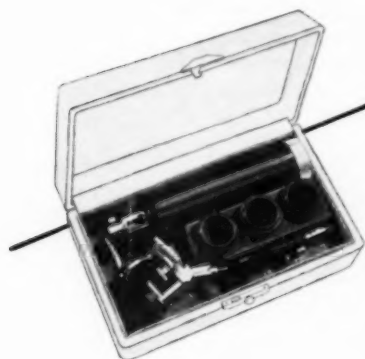
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Medical School Faculties in the National Emergency

The register of medical school faculties, prepared as a joint project of the AAMC and the Office of Defense Mobilization, supplies important statistics about the nation's teaching manpower.

HAROLD S. DIEHL, MARGARET D. WEST, ROBERT W. BARCLAY

IN RESPONSE TO the added demands for physicians created by the national emergency, medical schools have expanded their enrollments. They have found it increasingly difficult, however, to attract and retain faculty members commensurate to their expanded enrollments. To a large degree this has been the result of the increasing competition for physicians' services throughout all sectors of the health economy. In recognition of this problem and the importance of the role of medical schools in the national emergency, the Health Resources Advisory Committee¹ and the Association of American Medical Colleges jointly surveyed medical school faculties in February 1951. In scope the survey was twofold; it was designed to show: (1) normal or existing staffing levels which could serve as bench marks in mobilization planning, and (2), the extent of present

and potential losses due to military withdrawals under Public Law 779, the "doctor-draft" law.

Questionnaires drawn up and mailed by the Association of American Medical Colleges were completed by individual faculty members and transmitted by the Association to the Health Resources Staff, Office of Defense Mobilization. A copy of the questionnaire is shown in Figure 1, page 235.

Survey Findings

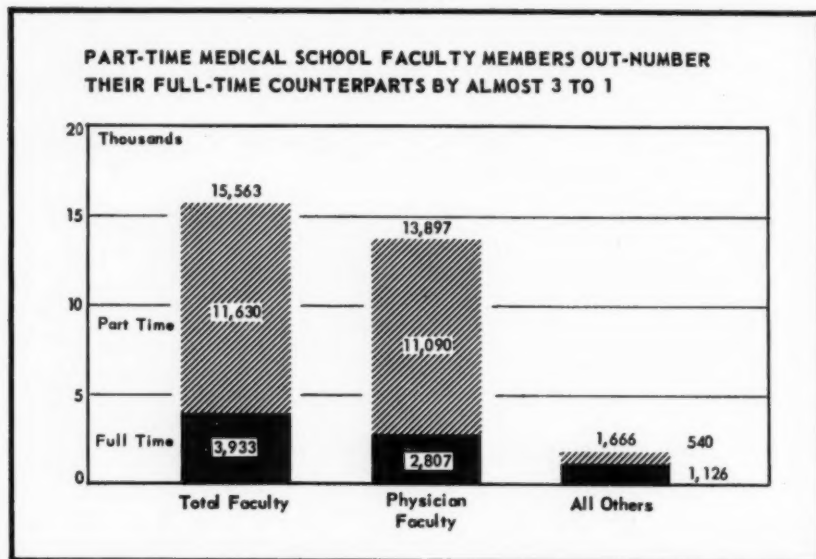
A staff of 15,563 teachers and research workers, including almost 14,000 physicians, held faculty appointments in medical schools in February 1951. This number included all faculty members, exclusive of residents, with the rank of instructor or higher who devoted 25 hours or more annually in teaching, research, or administration at a medical school.²

Full-Time and Part-Time Personnel

Most medical schools rely heavily

Dr. Diehl is a member of the Health Resources Advisory Committee and dean of medical sciences at the University of Minnesota. Mrs. West and Mr. Barclay are members of the Health Resources Staff of the Office of Defense Mobilization.

CHART 1



upon part-time personnel, especially for instruction in clinical subjects. In February 1951, medical faculties included 3,933 members with full-time and 11,630 members with part-time appointments. Part-time personnel made up 75 per cent of the total faculty members, 80 per cent of the physician-faculty members and 32 per cent of the nonphysician faculty members. (See Chart 1.)

Many of the 11,630 part-time faculty members devote relatively little time to teaching. More than 2,100 of them, 18 per cent of the total, devote less than 100 hours per year to medical school activities; another 2,300 devote between 100 and 199 hours per year; and 1,500 between 200 and 299 hours per year. (See Chart 2.)

Sources of Income

Many faculty members, especially those who devote but a small amount

of time to medical schools, receive little or no salary for their services. About one-half the total faculty reported no income at all from the medical schools or teaching hospitals. Forty-nine per cent reported some payment for their medical school and teaching hospital services, but only 20 per cent received all of their earned income from this source. Using the median as a measure, the typical teacher receiving no income from teaching worked 150 hours per year; while the teacher who received all earned income and the teacher who received between 75 and 99 per cent of earned income from this source devoted 2,250 hours per year to medical school responsibilities. (See Table 1 and Chart 3.)

Part-Time Faculty Patterns

The patterns of part-time employment vary sharply from school to

Medical School Faculties in the National Emergency

ASSOCIATION OF AMERICAN MEDICAL COLLEGES
REGISTER OF PERSONNEL TEACHING IN AMERICAN MEDICAL COLLEGES

Each person of the rank of instructor or higher who is scheduled to devote 25 hours or more of time during the school year 1950-1951 to instruction in the medical school is requested to complete this blank and return it to the head of the department in which his work will be done. Please have the information typed. Note: This information will be used by the National Security Resources Board, and a register will also be maintained by the Association.

Do Not Write in This Space

1. Name: _____

LAST
FIRST
MIDDLE
2. Year of Birth: _____
3. Sex: () 1. Male; () 2. Female
4. Medical School at which you hold appointment: _____
5. Department: _____
6. Your full academic title: _____
7. At what hospital do you hold an appointment? _____
8. Education (earned degrees):

Institution Awarding Degree	City and State	Year degree Conferred
B. A. <input type="checkbox"/> or B. S. <input type="checkbox"/>		
M. D.		
Ph. D.		
Other (specify)		
9. Military or other governmental service:

(HIGHEST RANK)
in (CORPS)
in (BRANCH OF SERVICE)
10. Total length of active military service: _____ months. Date of separation: _____
11. If now a member of a reserve indicate:

(RANK)
(CORPS)
(BRANCH OF SERVICE)
ACTIVE OR VOLUNTARY (INACTIVE)
12. Status under Public Law 779 ("Doctor draft" law): Priority group (1, 2, 3 or 4): _____
 State in which registered: _____
13. Estimate the average amount of time you devote to the work of the medical school:

Teaching and clinical services (not private practice)	Hours Per Week	Weeks Per Year
Research		
Administrative		
Total		
14. What percentage of your earned income do you receive as salary from the medical school and teaching hospital?
 () 1. Zero; () 2. Between 1 and 24%; () 3. Between 25 and 49%; () 4. Between 50 and 74%;
 () 5. Between 75 and 99%; () 6. 100%

Date: _____
Signature: _____

school. For example, one school has a staff of part-time teachers which comprises 95 per cent of the total faculty in numbers and 80 per cent of the total teaching and research time, while another school's part-time staff accounts for only 6 per cent of the faculty and 4 per cent of the total faculty time.

FIGURE 1—Shown above is the questionnaire mailed to individual faculty members by the Association of American Medical Colleges.

Many factors determine the extent to which a school makes use of part-time faculty. It was noted, however, that the use of part-time faculty is related in general to the size of the

TABLE 1—Median annual hours of medical school faculty by share of earned income Received from medical school and teaching hospital, February 1951

Share of earned income from medical school and teaching hospital	Per cent of total faculty	Median annual hours
All income groups.....	100	450
No income.....	49	150
Between 1 and 24 per cent.....	15	350
Between 25 and 49 per cent.....	4	1,250
Between 50 and 74 per cent.....	3	1,900
Between 75 and 99 per cent.....	7	2,250
All income groups.....	100	450
Unknown.....	2	—

city in which the school is located. With few exceptions, schools in urban areas with large physician populations use a high proportion of part-time faculty. (See Chart 4.)

Proportionately many more physi-

cians than nonphysician faculty members hold part-time appointments. Fifty-six per cent of the 13,897 physician faculty members reported less than 500 hours per year of medical school work compared to only 7

CHART 2

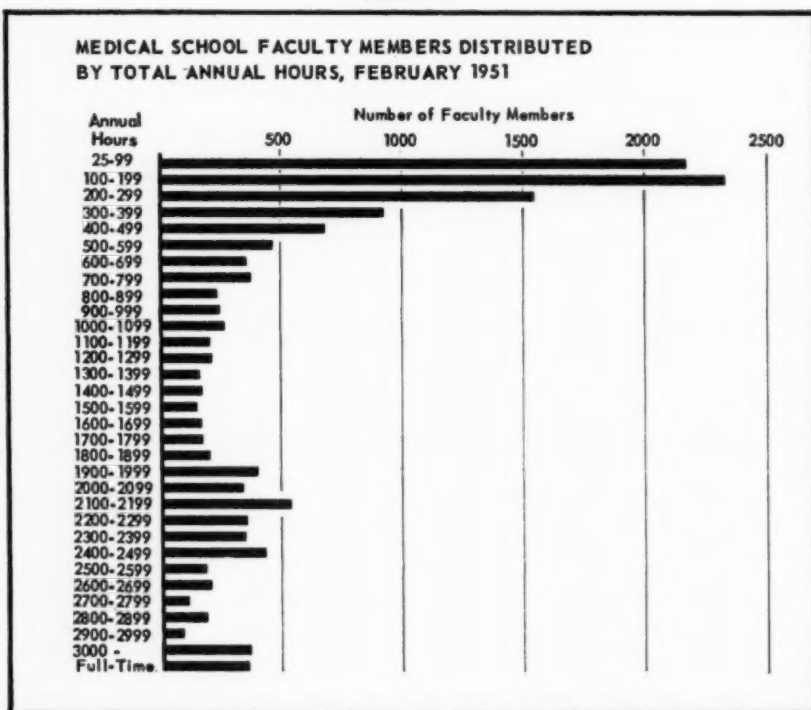
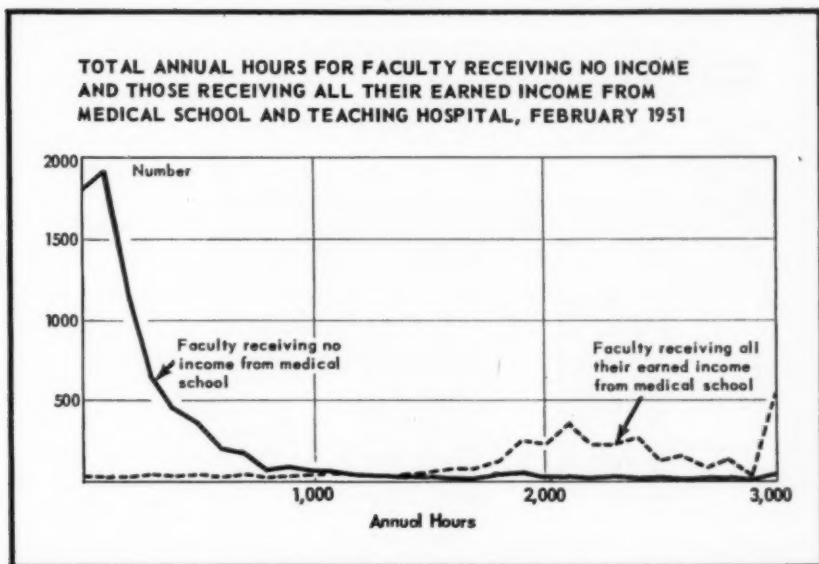


CHART 3



per cent of the nonphysician faculty.

Full-Time Equivalent Staff

The total hours that the 15,563 faculty members devoted to teaching, research and administration in February 1951 equalled those of a full-time staff of 6,706. Although part-time staff outnumbered the full-time faculty by almost three to one, the numerically smaller full-time staff contributed a greater share of the total teaching and research time. They provided three-fifths of the total faculty time while part-time staff supplied the remaining two-fifths.

Total faculty time as used in this report is measured in terms of full-time equivalents. Each faculty member reported as either full-time or employed for 1,920 hours per year or more was considered as one full-time equivalent. The time of those teaching less than this number of

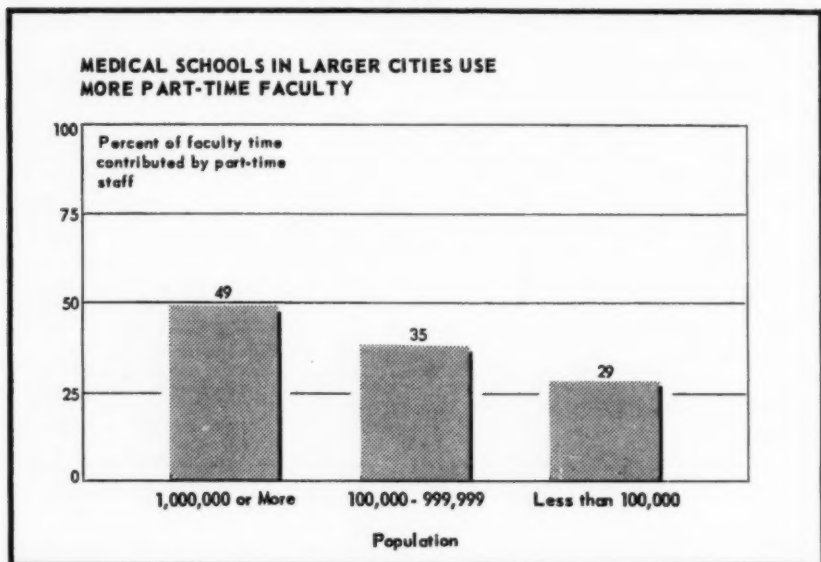
hours was expressed in fractions of full-time equivalents with 1,920 hours equal to one full-time equivalent; i.e., the time of five part-time teachers working 384 hours per year each would be considered as one full-time equivalent.

The arbitrary limit of 1,920 hours per year represents the equivalent of a 40-hour week for a 48-week year. More than three-fourths of the faculty receiving all their earned income from a medical school reported at least this amount of time.

Preclinical and Clinical Faculty

Faculty members assigned to clinical departments outnumber those in preclinical departments by almost five to one in total numbers, and by two to one in total teaching time or equivalent full-time staff. The staffs of clinical departments, where faculty members are predominantly physi-

CHART 4



cians, contained 12,889 teachers and research workers. In contrast, pre-clinical departments were staffed with 2,674 faculty members, the majority of whom are full-time teachers or research workers without M.D. degrees.

In terms of total teaching and research time, the 12,889 clinical faculty members provided a full-time equivalent staff of 4,494; and the average clinical teacher devoted 35 per cent of full-time to the medical school. In the case of preclinical faculty, the 2,647 members represented a full-time equivalent staff of 2,212; the average of this group taught 83 per cent of full-time. (See Chart 5.)

Teaching, Research and Administration

Slightly more than one-half, 55 per cent, of the faculty time was spent in teaching; another 32 per

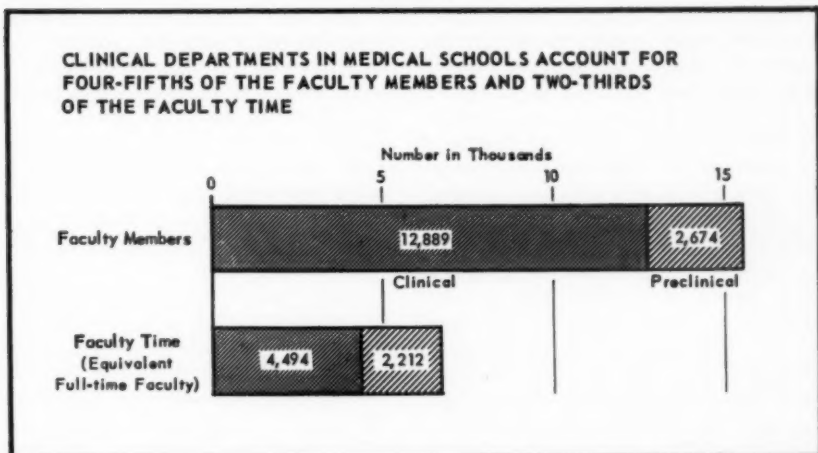
cent was spent in research, and the remaining 13 per cent in administration. (See Chart 6.)

Engaged in research were almost 6,600 faculty members whose total research time represented a full-time equivalent staff of about 2,150. Approximately the same amount of time was spent in research in both clinical and preclinical subjects; in clinical subjects, however, research accounted for about 25 per cent of the total time while in preclinical subjects it represented 48 per cent. Subjects in which research time was proportionately high included: anatomy, biochemistry, pharmacology, physiology, and industrial medicine.

Age and Sex of Faculty

The average faculty member was 43 years old, the youngest was 22 and the oldest was over 80. The typical part-time faculty member was 45 and

CHART 5

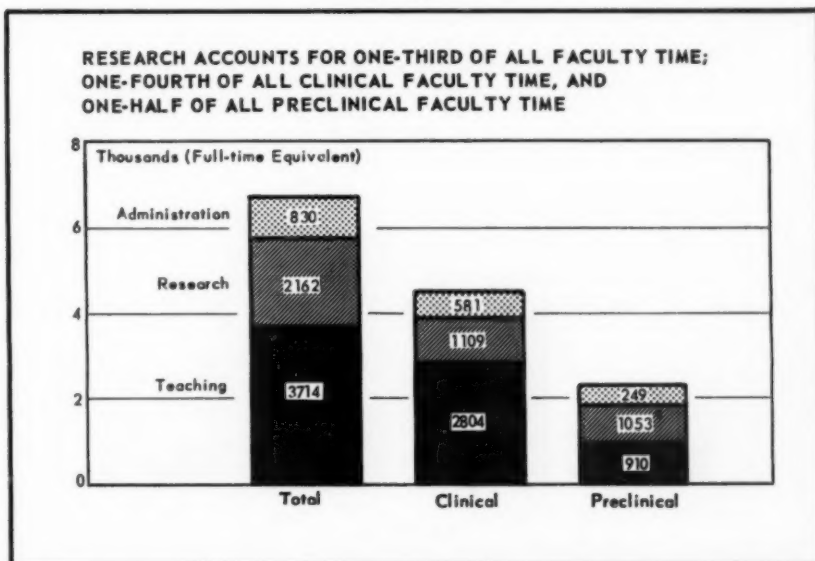


the typical full-time member was 41.

In general, younger faculty members work longer hours at medical schools than older teachers. Many more of them hold full-time appointments.

Those 40 years of age or younger represented 46 per cent of the faculty in numbers, but over one-half of the total faculty time. On the other hand, teachers over 40 represented

CHART 6



sented a bigger share of the total faculty in numbers than they did of the total teaching and research time.

It also is the younger physicians who undertake the major share of research at medical schools. More than 70 per cent of the physicians engaged in research for 1,000 hours per year or more were 40 years old or less. Older faculty members spent more time in administration. (See Chart 7.)

About the same proportions of men and women physicians are in the medical education field. About 5 per cent of all physicians are women and approximately this same per cent of all physician teaching time at medical schools is provided by women physicians.

Physician Faculty

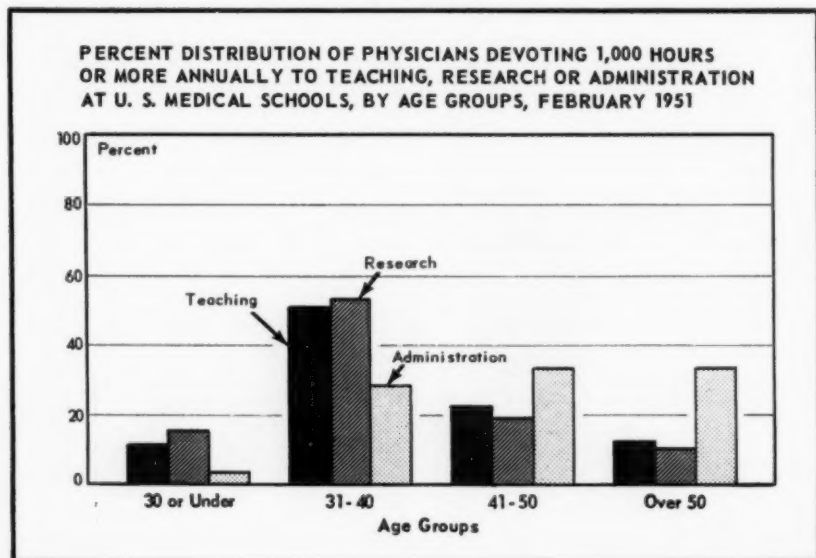
Schools varied widely in the extent to which they used physicians on their

faculties. At no school, however, did the proportion drop below 60 per cent. Schools with higher proportions of physicians on their faculties and those with younger physicians stand in a more vulnerable position to lose staff to meet military needs than those who use teachers who have no obligation for military service.

Public Law 779

Some 90,000 physicians in the United States, including many members of medical school faculties, have registered under the "doctor-draft" law which, by executive order, became effective in October 1951. On the basis of the nature and length of their past military service, these men, as well as members of military reserve components, are being used to meet the military need for health manpower. As they are withdrawn from civilian

CHART 7



Medical School Faculties in the National Emergency

health services, it is inevitable that medical schools, hospitals and all our other health resources will lose some staff.

At medical schools, less than 1 per cent of the faculty, both in numbers and in full-time equivalents, had been withdrawn for active military service by February 1951. (See Chart 7.)

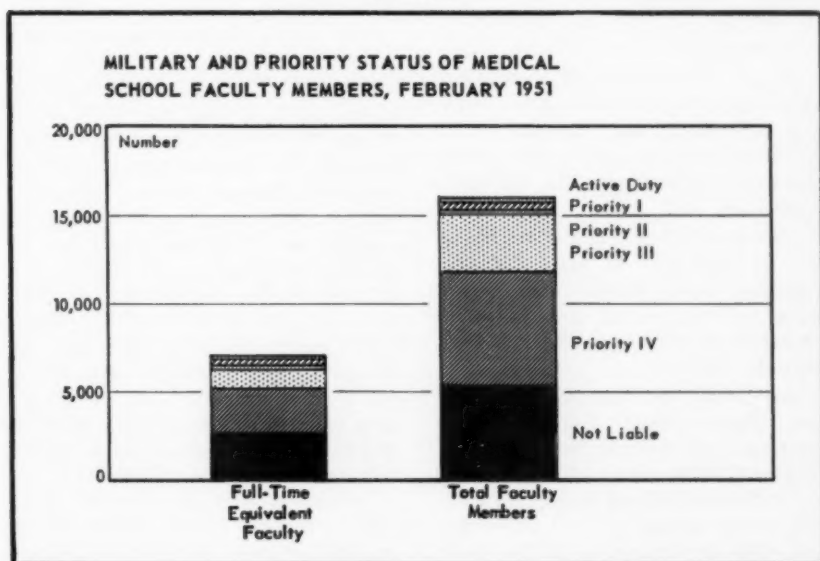
At that time, 285 faculty members, 2 per cent of the total, were in Priority I. These were primarily younger men and they supplied about 3 per cent of total faculty time. Men in this priority pursued their medical education during World War II, either at government expense or through occupational deferment, and had less than 90 days of subsequent service. Since the "doctor-draft" law was first adopted, this category has been the chief source of supply of physicians

for the Armed Forces. Many of the Priority I men on the medical school faculties in February have no doubt been withdrawn from their teaching assignments by this time. Latest estimates contemplate the supply of qualified Priority I men will be exhausted in late 1952 or early 1953.

Next in line for military service, after those in Priority I, are physicians registered in Priority II and reservists with military experience meeting the criteria of Priority II under Public Law 779. Men in Priority II had the same educational opportunities as those in Priority I, but have had more than 90 days but less than 21 months of subsequent military service.

At medical schools a total of 212 faculty members reported themselves in Priority II. They account for 2 per cent of the full-time equivalent

CHART 8



staff. As in the case of Priority I men, physicians in Priority II are younger than the average faculty member and devote more time to teaching than the typical teacher.

When the eligible members of Priorities I and II have been called to duty, the men in Priority III will become liable for military service. Men in Priority III have had no prior military service. Since the physicians who were physically disqualified and those who were deferred for civilian service during World War II are registered in this group, many registrants in this category will again be found unacceptable and unavailable for military service. In addition, physicians now graduating who were too young for military service during the last war also are registered in Priority III, if they do not enter military service as a result of obligations under the basic draft law.

Medical school faculties include 3,178 Priority III physicians—one-fifth of the total faculty. They make up 19 per cent of the equivalent full-time staff.

A total of almost 6,700 physicians, 43 per cent of the medical school faculty members, are veterans and, therefore, in Priority IV. This group makes up 36 per cent of the full-time equivalent staff.

Men in Priorities I and II are liable to call according to age, with the youngest being called first, while those in Priorities III and IV are to be called according to length of past military service.

Not liable for registration under the "doctor-draft" law are 5,163 teachers and research workers who constitute 40 per cent of the equivalent full-time staffs of medical schools. This group includes women, over-age, and alien physicians, as well as fac-

ulty members not in professions covered by Public Law 779.

Since faculty members in Priority I accounted for only 2 per cent of total faculty members and 3 per cent of teaching time, withdrawals from this group for military service at the present rate of mobilization will not be on a scale large enough to cause severe hardships on medical schools. At the time of the survey, only five schools had 5 per cent or more of their faculties in Priority I.

Priority I faculty were not concentrated in any one department or in any one subject. There were 88 in preclinical subjects, representing slightly more than 3 per cent of the total and 168 in clinical subjects, a little more than 1 per cent of the total. Among the individual subjects, pharmacology and physiology had the highest proportions in Priority I—4 per cent. Anesthesiology was highest among clinical subjects, followed by pediatrics and psychiatry.

Conclusion

Current mobilization levels are relatively low. At present there are about 13,000 physicians in uniform compared to a peak strength during World War II of more than 60,000. In part, the difference is due to the smaller authorized military strength, and in part it is due to more economical and effective utilization of medical personnel in the department of defense. The present staffing pattern calls for less than four physicians per 1,000 troop strength as compared to between six and seven per 1,000 men during World War II. Any step-up in the military mobilization level will, of course, increase withdrawals from civilian life.

In making their plans for the years ahead, medical schools should keep in mind the order of call-up of physi-

Medical School Faculties in the National Emergency

cians under the "doctor-draft" law. In the immediate future, men in Priorities I and II are liable for military service. Therefore, those least subject to withdrawal from civilian life are, in this order: (1) those who are not required to register under the special physician draft act; (2) men in Priority IV; (3) older men in Priority III; and, finally, (4) younger men in Priority III.

At present mobilization levels, the impacts of the "doctor-draft" law are not severe enough to seriously disrupt medical education. This fact,

however, does not preclude the need for planning both at the medical-school level and from an overall point of view, if we are to successfully meet the problems and responsibilities which may be ahead.

REFERENCES

¹The Health Resources Advisory Committee also serves as the National Advisory Committee to the Selective Service System.

²The 72 four-year and seven two-year medical schools in operation in February 1951 were included in the survey. Excluded were the newly-opened University of California in Los Angeles and the Graduate School of the University of Pennsylvania.

Instruction in Medical History Taking

Wire recorders may be used to show the student how his own errors in history-taking confuse the problem of diagnosis.

**STEWART WOLF, THOMAS P. ALMY
JOHN T. FLYNN, FRED KERN**

OF ALL THE techniques to be learned by the medical student, none is more commonly used or more fundamental to his success as a physician than the taking of a medical history. Nevertheless, in many medical schools a minimum effort is applied to instruction in this technique and to critical appraisal of the student's method of eliciting the history.

Commonly, the student's introduction to history-taking in his second year may consist of a single lecture followed by a two-hour practice session in which the students question each other. In subsequent ward and clinic work the total number of facts, their orderly arrangement and the neatness and promptness of records often become the main preoccupation of the instructor in evaluating the student's capability in this subject.

On the other hand, actual attempts to tutor students in the techniques of interviewing have been successful in the hands of Fremont-Smith¹ and Finesinger.² Ripley³ has observed

rapid improvement in the performance of students whose histories were criticized by an instructor actually sitting in.

In the present study, the authors have attempted to document and appraise more completely the performance of individual students with the aid of wire and magnetic tape recorders. The subjects of the study were fourth-year medical students at Cornell-New York Hospital working in two medical outpatient clinics. It was possible to observe the student's approach to the patient and to ascertain precisely what questions were asked and with what effect.

The study was begun as two separate projects. Two of the authors (Kern and Almy) made wire recordings of 14 student-patient interviews in the gastrointestinal clinic. The student knew the recording was being made but the microphone was concealed from the patient. In 50 student-patient interviews, Flynn and Wolf employed a magnetic tape recorder in the general medical clinic, supplementing these data with direct observation of the patient and the student by the instructor. In these sessions the recording apparatus and

The authors are associated with Cornell University Medical College, Dr. Wolf as associate professor of clinical medicine, Dr. Almy as James Ewing associate professor of neoplastic diseases, and Dr. Flynn and Dr. Kern as instructors in medicine.

microphone were inconspicuously placed but not concealed. A few of the patients noticed the recording procedure but none of the patients or students were significantly embarrassed or troubled by the presence of either the recording apparatus or the third party.

Data secured by the two groups using these slightly different techniques were sufficiently similar to warrant inclusion in this one report. The objective in both cases was two-fold: first, the clearer definition of student errors, and second, constructive teaching effort to correct these errors. The complete verbal records on wire and tape permit careful and repeated study of mistakes and omissions, together with determination of frequency of certain common errors. The playback of these recordings to the students themselves, singly or in groups, adds vivid dimension and dramatic force to corrective efforts by the medical teacher. The instructor also may come to feel more urgently a need to re-evaluate past methods of teaching this subject and to correct deficiencies in the early instruction of students in this discipline.

Results

The errors of student technique in eliciting histories were fairly uniform and seemed unrelated to knowledge of medical facts, amount of effort expended or amount of interest in patient welfare. The most probable common denominator seemed to be inadequacy of educational methods and efforts in this direction in earlier medical school years.

The defects in technique may be grouped in two general categories:

1. Positive errors or errors of commission:

(a) The first was that the students

approached their task with the notion that the history was an instrument which could be applied to patients in a rather uniform fashion, and that they could take a "complete" history by asking all the questions in the outline supplied for their guidance. Their demands of rapid accurate answers to such a prepared list of questions betrayed a lack of appreciation of the fact that a history is an exploration whose direction is suggested by each previous step so that most questions are worded in view of replies to earlier ones. Moreover, the students failed to take into account the possibility that many questions may elicit answers which are politely or protectively misleading or entirely incorrect.

(b) By forcing the patient to express his "chief complaint" in a few fully quotable words, they often failed to get on the right track. Often the chief complaint as recorded by the student contained a plausible excuse for the hospital visit, but did not reflect the patient's real reasons for seeking help. Since the handling of subsequent portions of the history depends inevitably on the content of the chief complaint, this inadequacy often led to a misdirected and largely irrelevant inquiry.

(c) The students did too much of the talking and questions were phrased in such a manner that they could be answered "yes" or "no." This not only deprived the observer of the shades of meaning which a patient could communicate by a less direct answer, but denied him the important leads which are frequently contained in a patient's relatively free descriptions of his difficulties.

(d) Often the opposite error was made at another time in the interview by the same student by allowing the patient to engage in a long cir-

cumstantial account of details of his symptoms and failing to bring the general problem into focus. Occasionally the interview assumed the tone of a social conversation, with the student interrupting the patient now and then to utter words of sympathy or approbation without gathering useful data.

(e) Often evident was lack of taste and discretion on the part of the student in phrasing questions and in attempting to deal with the patient's natural reticence in discussing personal matters. An offhand approach or introductory remark such as, "Now I am going to ask about your personal life," often put the patient on guard unnecessarily and then yielded misinformation. The sensibilities of some persons were offended by such questions as, "How's the sex life?" or, "Did you ever have gonorrhea or syphilis?" Some questions were phrased in a fashion entirely unsuited to the patient; for example, a candidate for the doctorate in a scientific field was questioned about "making water" rather than about "urinating." Again, a 14-year-old slow-witted schoolboy was asked, "Do you repress resentment?"

2. Negative errors or errors of omission:

This group commonly related to oversights on the student's part in not following through on obvious or possible leads offered by the patient.

(a) When important leads were provided by the patient's spontaneous remarks or in the manner in which he answered specific questions, the students frequently failed to follow them up. Often an event would be carefully noted by the student but the possible implications of the event in regard to the health or emotional state of the patient would be ignored. Similarly, the reasons for and results

of previous diagnostic and therapeutic procedures often were ignored.

(b) Difficulties also arose from insufficient awareness of the individual nature of the patient and his limitations as a witness. The reliability of the patient's observations too often were easily accepted. A patient's estimate that an attack of syncope had lasted "10 minutes" was recorded without question, and on several occasions the patient's statement that he had never had tarry stools was not doubted until inquiry by the instructor revealed that the patient never looked at his stools. The student sometimes accepted the patient's definition of an episode as a "cold" or a "heart attack" without weighing the evidence in support of these conclusions.

(c) A number of factors, particularly the student's preoccupation with charting procedures, also his general inexperience, resulted in the loss of valuable leads from the tone and quality of the patient's voice, slips of the tongue, misinterpretations, contradictory statements. Similarly, obvious signs of disturbance in the patient were often missed, such as facial expression of emotion relating to certain questions, flushing, tears, sweating, changes in respiration.

Illustrations of Errors

The following protocols are offered to illustrate many of the errors outlined above:

The first example illustrates excessive interruption of what might have been a very graphic description of an acute attack of illness. A 53-year-old woman with epigastric complaints was questioned as follows:

Patient: I left the house feeling perfectly all right; I live in Queens. I got on at 90th St. Station and, before I reached Woodside on the local,

I began to feel kind of peculiar feelings in the stomach, no actual pain, but I might say nauseous . . .

Student: Where did you feel that?

Patient: In through there...and...

Student: And you felt sick at your stomach?

Patient: Yes. And I get off at Queens Plaza and go across the platform to the BMT, which takes me to Lexington Ave.; it goes down into the subway. Well, when I got down underground, the perspiration just poured off me as if I was under a shower . . .

Student: This was in the evening?

Patient: No, in the morning.

Student: In the morning. Were the subways crowded?

Patient: Oh, yes. I was standing up . . .

Student: And you had a sick feeling right there?

Patient: It started there, as I say, and it seemed when I got into the subway, underground, the perspiration just poured off me. I had this same suit on . . . and when it was all over . . . I felt that it had gone clear through this suit that I had on . . .

Student: You were coming back from what, then, shopping?

Patient: I was going to work.

Student: You were going to work. What kind of work do you do now?

Patient: I'm with the New York City Housing Authority . . .

Student: What kind of work?

Patient: Stenography and typing.

Student: Stenography and typing.

Patient: And . . . I ordinarily change at Lexington Ave., and I got off there. I was afraid I was going to faint, although I have never fainted in my life. Things started to get grey and black, I just hung on, to this bar . . .

Student: This wasn't pain?

Patient: Well, combined with . . . I think the perspiration, I believe,

started after the pain in the . . .

Student: Yes, but was it pain; or was it an uncomfortable feeling?

Patient: It wasn't a sharp pain, it was just a . . . well, I don't know . . . it was a kind of a . . .

Student: Dull?

Patient: . . . Digestive pain, that's what I think it . . .

Student: Yes, but did it feel dull, was it aching?

Patient: Yes, it was a dull pain, it wasn't a sharp pain.

Student: It was dull. Was it more discomfort or pain?

Patient: Discomfort.

Student: Yes. Did it move up into your chest or down into your lower abdomen?

Patient: No.

Comment: About the only objective accomplished by this staccato rhythm of questioning is the interruption of the patient's account of her symptoms which might have turned out to be coherent and informative.

Example Two

A "routine" personal history on an extremely tense 48-year-old white married woman with complaint of frequent loose stools illustrates not only gaucherie but cursoriness and lack of curiosity on the part of the student:

Patient: I just got married; it must be about four and a half years ago.

Student: Had you ever considered marriage before that?

Patient: Oh yes, a couple of times before that.

Student: And you hadn't undertaken that, however?

Patient: No.

Student: Was there any reason?

Patient: No . . . oh, there are reasons. This boy I went out with was a neighbor and . . . well, he just couldn't settle down to saving or get

to the point where we were getting anywhere, so we finally broke off after going around with him for about 10 years. I just went out with a couple of men in my life for any length of time.

Student: I understand. Do you eat three meals a day?

Patient: Three?

Student: Yes. Do you usually have some meat or fish every day?

Patient: Yes.

Student: Fresh vegetables, fresh fruit?

Patient: I won't say that I eat fresh fruit every day. We usually have juice in the morning, usually grapefruit juice in . . .

Student: All right. How frequently do you have eggs?

Patient: Well . . . ah . . . I used to have an egg almost every morning, that was before I was married, well . . . my husband doesn't care for them, so I don't bother about them for myself. But in the past few months since I haven't been feeling well, I have been eating soft-boiled eggs. Now they sort of . . . well, I don't know whether they disagree with me, I have sort of taken a dislike to them.

Student: How many cigarettes do you smoke a day?

Patient: I don't smoke.

Student: You don't smoke. How often do you take some kind of whiskey or beer?

Patient: I haven't had a drink in over a year. I don't drink either, except once in a while to be sociable, but I haven't even done that since I have been sick.

Student: How much sleep do you get a night?

Patient: Well, I try to get about eight hours every night, but I don't get that.

At this point it seemed apparent

to the instructor that this patient had always had a shaky relationship with the opposite sex, and that facts about her relationship to her husband might be pertinent to her colitis. In an attempt to preserve continuity in the questioning so that the patient would not feel threatened by a sudden change of topic, he asked:

Instructor: Has your husband been drinking at all?

Patient: He doesn't drink either, nor smoke . . . (A long pause ensued here during which the patient seemed to be preparing some further statement about her husband.) My husband is at least 10 years older than me, and that may explain some of our differences. I say at least 10 years older because when we first met, he told me that he was 10 years older; but since, I have had reason to believe that he is more than 10 years older than I am. I don't know whether that means anything, except that we don't think alike on many things . . . and he clings to very, very old-fashioned ideas about almost everything and he has something to say about everything, including things that I don't think concern him . . . like things about the house, furniture, curtains or anything. He will come in the kitchen . . . you know, something I am cooking . . . well, he thinks he knows more about cooking than I do. He has something to say about everything.

Instructor: How much do you think these things have to do with your health?

Patient: Well, I think that must have quite a bit to do with it. I hate to say it (began to cry at this point) but in my heart I feel . . . that . . . I don't like . . . I don't like to break up my marriage . . . but I realize that . . . my husband was not the person . . . I should have married . . . it was

only about six months after we were married that he struck me . . . just in a fit of temper over some silly little thing that didn't concern him.

Example Three

The following is an example of disregard of an important lead on three separate occasions because of preoccupation with the mechanics of charting and with minute details of the patient's arthritic symptoms. Finally, a single question by the instructor brought out the pertinent material near the end of the interview.

A 63-year-old Irish born spinster was describing joint pain.

Student: And you started to feel tired at that time?

Patient: Well, I had to go to Boston, to a funeral . . .

Student: At the same time that you had pain in the back?

Patient: No, at the same time that I had pain here, at the same time that I had pain in the hand, *my sister was sick* . . .

Student: Then the next thing that you got was pain in the hand?

Patient: In the hand . . .

Student: How long ago was that?

Patient: Well, I'll tell you now . . . exactly . . . that must be about six weeks.

Student: Six weeks ago you first had pain in your left hand. Where exactly in your hand was it?

Patient: There . . . and here . . . I just can't catch anything with it.

Student: Now are those the same sort of pains, both sharp and dull, or are they both dull? Aching?

Patient: I don't know. The point that worries me . . .

Student: Now just one second, I want to write that down. That time . . . when you had the pains in this

hand over here, did you have pains in your wrist, too?

Patient: Yes . . .

Student: It wasn't pains along both . . .

Patient: Along here and very much here. Very bad here in the wrist.

Student: Were your wrists stiff at that time—was it difficult to move the hand?

Patient: I tell you, doctor, I think . . . I haven't used this hand . . . as I told you, *my sister's husband died and she was sick, and I took care of her for a whole week and I think that is what brought this whole thing on me.* Now she's well, she is taking care of me. I get very tired.

Student: I want to ask you some more about this hand. Was it swollen at that time? Was it red or swollen?

Patient: Not a bit, no change in it. You see it was swollen, there, you see that.

Student: It was swollen right in that area, not in any other part? But it has never been red or inflamed?

Patient: No, not at all, I could wash my hands and it would never even bother me.

Student: Is this swollen, your hand?

Patient: You see, right in here. Can't you see that it is swollen?

Student: Yes, I can see that. Can you move your fingers?

Patient: Sure, well, I can't very well . . . When I have this pain here, in that hand, I can't sew.

Student: That is a constant pain? Never goes away?

Patient: Yes, this never goes away; and this is what worries me, this started . . . sometimes when I get up in the morning, this is bad, and then I rub it and it goes away. *And this was paining me all the time that I was there, at the funeral. I came back then, and my sister . . . I took*

care of her for a week, and then I got this.

Student: Then you got what?

Patient: Here, in the shoulder, and here.

Student: How long ago was it that you got the pain in that shoulder?

Patient: It must be five weeks, because he has been dead a month now.

Student: Five weeks ago. That is the same sort of pain, an aching . . .

Patient: A wicked pain.

At this point the instructor broke in and asked: You said you were very tired, is that right?

Patient: I was tired, I know the reason I was tired, I told you I had to go to Boston to a funeral, my sister was sick. I came home and nursed her for a week. She wasn't able to go to her husband's funeral.

Instructor: Your sister wasn't?

Patient: I had to nurse her for a week, she had a bad cold, she had a doctor every day. And then I used to get up at night, and give her some medicine, you know. I think myself I got cold, then I got this, in my arm. And her doctor told me to bathe it with epsom salts, the hand . . . well, I did it, three times a night, and the pain . . . it didn't help it one bit. I got tired then, and I think this is the cause of the whole thing. I imagine, myself . . . I don't know. I got very tired.

Instructor: Had you travelled all the way? . . .

Patient: I travelled all the way, and I kept my hand up the whole time in that car, with the pain. I got to Boston, then we got off, we had to take a car to the cemetery miles out again. That is where they lived before and that is where their graves are. So I had to go, and that is what I really think was the cause of all my troubles. But I am not going to say it. Now she is all right, she is taking

care of me . . . she is much older than I am.

Instructor: You are not going to say what?

Patient: I am not going to say anything about it . . . I mean to say, I don't want to resent it or anything . . . I am not going to think . . . to let her know that was the cause of it. That would make her feel bad.

Instructor: You said something about resenting something?

Patient: Well, I wouldn't want to say that to my sister now that that was the cause of this trouble, taking care of her. I imagine that didn't help me any, because I wasn't very well.

Comment: Here the references to the sister's illness and surrounding circumstances were missed on three occasions by the student, who passed over them to focus on some extremely exact and probably unimportant details of the symptoms. Often by carefully watching the patient it is possible to tell that a single question is all that may be needed to bring out relevant material but the student's preoccupation with charting and with haste to get to the next question interferes with this observation. Also, the student may miss changes in the tone and quality of the patient's voice, flushing, tears, slips of the tongue, emphasis on certain words, misinterpretations, contradictions and so on.

Teaching value of the recorded interviews

It is not yet possible for us to measure accurately the effectiveness of the observed and recorded interview in improving the performance of the average medical student. The students themselves recognized their need for teaching of this kind. Many of them, hearing the playback of their own histories, quickly understood how the errors thus revealed

had been reducing their efficiency in the clinic. Nearly all of them spontaneously expressed appreciation for the recorded interview, and many suggested that such teaching efforts should be made earlier in the medical school course.

Those students who had a second recorded interview at a later date showed in the later interview varying degrees of improvement over their earlier performances. Therefore, it seems possible by this method to teach the "art" of history-taking, or at least to influence favorably the development of techniques which can be perfected with longer experience.

Discussion

Some of the underlying causes of the common defects in history-taking have become apparent during our study. Clearly, some of the difficulties are due to the medical inexperience of the student, and in some of them to lack of curiosity regarding human relations and possible etiologic factors in disease.

More important, however, was the clerk's attitude toward the "complete" history as a routine to be carried out rather than an individual analysis of a patient's illness. This attitude would seem inevitable in those whose training in history-taking has begun with the mastery of a standard set of questions, and whose work is judged chiefly by the completeness and neatness of the longhand essays they produce. The current practice of writing the "present illness" in ink as the patient relates the story tempts the student to force the unfolding story into a "logical" order at the expense of overtaxing the patient's memory and distorting facts. Otherwise, the present illness as recorded must represent a jumble of random notes, often inadequate as

written to convey the full meaning expressed by the patient, and entirely unsuitable as a record for future use. The present emphasis on lengthy records also means that too little time is left for the student to weigh the clinical decisions he must make, and to gain skill in giving explanations and instructions to patients.

The family history is too often regarded as a record of biological dysfunction of the patient's ancestors, and not as a vital area of interpersonal relationship possibly relevant to present symptoms. There is a similar tendency to treat the personal history in a stereotyped way.

Often material which may be relevant to the present illness is choked off by the next question, because the student feels that personal history is set off in a category of its own and separated from the present illness, family and past histories to which it may be highly pertinent. It seems more appropriate and profitable to inquire into personal data under the heading of present illness, family history and past history so that these categories may be more comprehensive and meaningful. Moreover, it usually is less embarrassing to the patient to tell about close personal matters if they are being explored while the focus is on illnesses and developmental and chronological details.

Obtaining a history in adequate perspective as regards personality and development of the patient requires more than proper emphasis and arrangement by the student. Eliciting reliable and reasonably complete data in the amount of time allotted depends heavily on the student's general bearing and his manner of approach. These cannot be adequately recorded on tape, but they can be and were observed and criti-

cized by the instructor as he sat in on the history-taking procedure.

Procedures for Improvement

Among the relatively easily correctable defects in the history-taking procedure, the following suggested themselves: the effort presently made by most of our students to record the history in its final form as it is obtained from the patient is partly responsible for many of the difficulties we have reviewed above. Accordingly, it seems desirable that even in a busy outpatient department the clerk should merely take informal notes as the patient relates his history, and assemble his data in logical essay form at a later time, usually while the patient is undressing for his physical examination.

Our study has shown the need for closer attention to the technique of history-taking, particularly in the second and third years when the student is being introduced to the subject. Demonstrations of skillfully obtained histories to student groups, either by direct observation of the doctor and the patient, or by the medium of recorded interviews are helpful. It is further suggested that the early efforts of the student in history-taking be monitored by tape or wire recorders and observed by the in-

structor, with later review of the content and technique of the interview. As the important errors in technique are shared by nearly all students, this procedure would lend itself easily to group teaching.

Summary and Conclusions

It has been found possible for a third person (the instructor) and a recording device to be introduced into the room while the student is taking his history on a clinic patient without seriously inconveniencing the student or embarrassing the patient. By this means it has been possible to recognize deficiencies in the technique of history-taking which are surprisingly uniform.

These deficiencies have been listed and illustrated by direct quotations from recordings. When the recordings were played back to the students, the errors of commission or omission stood as easily grasped lessons in history-taking.

The efficacy of this method when applied to teaching cannot be appraised at this time, although the general impression is already apparent that students perform vastly better in the history-taking situation after even a single session in which recordings were played back to a group.

REFERENCES

1. Fremont-Smith, F.: Personal communication.
2. Finesinger, J.: Personal communication.
3. Ripley, H. S.: Personal communication.

Training the Student in Medical Psychology

Clinical psychology with particular reference to interviewing methods is part of a new curriculum for beginning students at the University of Vermont.

FREDERICK C. THORNE

THE PURPOSE OF this paper is to outline a new and revised curriculum developed by the author for a 16-hour introductory course in medical psychology for freshman medical students at the University of Vermont College of Medicine. The new program evolved continuously during a 10-year period of experimentation designed to adapt the subject matter of the introductory course in psychiatry to the needs of beginning medical students.

In our opinion, existing curricula provide good orientation to the study of mental disorder and to modern psychiatry as a specialty, but fail to provide systematic training in the psychological handling, interviewing and counseling of mentally normal (nonpsychiatric) patients. Problems of these patients perhaps are handled best by techniques which have been developed in the fields of clinical psychology and social work rather than in psychiatry.

It is our belief that clinical psychology has advanced more rapidly than clinical psychiatry in the development of research and training methods for objectifying the nature

of psychological case handling. Since World War II, a large amount of research data has been accumulated in the field of clinical psychology relating to these problems. Unfortunately, these results have not been assimilated systematically in medical science because of the isolation that still exists between clinical psychology and clinical medicine.

The thesis of this paper is that modern medical education is deficient in orienting medical students to basic psychological science in the present curriculum. Specifically, there is a lack of sufficient formal training in elementary methods of psychological case handling and interviewing techniques.

Historical Background

Prior to World War II, the fields of personality guidance and counseling were still prescientific developments. In 1943 the psychologist, Dr. Carl R. Rogers, published his now well-known "Counseling and Psychotherapy,"¹² outlining his new nondirective method of personality counseling. This method has revolutionized elementary counseling technique. Rogers, the first to objectify counseling methods by utilizing verbatim tran-

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scriptions and wire recordings, made possible the objectification and research analysis of exactly what goes on in counseling interviews. Since 1943, clinical psychologists have pioneered in placing interview and counseling methods on a thoroughly scientific basis and it may be truthfully stated now that something of a revolution has occurred which may be compared to the contribution made by Osler in standardizing and integrating medical practice.

One of the most significant results of this new movement has been the development of student training programs in this area of clinical psychology which far surpass anything thus far introduced in medical education. Trainees in clinical psychology are routinely being given intensive supervised training in psychological interviewing techniques utilizing wire recordings, follow-up studies and the research analysis of the dynamics of personality counseling. Under the guidance of the American Psychological Association,¹ an extensive program now is under way to standardize curricula and training methods in all graduate university departments undertaking to give training in clinical psychology.* Medical education and related disciplines would do well to pay detailed attention to these recent developments in the field of clinical psychology. Incidentally, the field of pastoral counseling already has taken over many of the new interviews and counseling techniques developed in clinical psychology.

Special Student Needs

No matter what specialty he prac-

tices, every physician is faced constantly with problems of establishing communication with patients and with details of psychological interviewing, counseling and case handling. Lacking formal training in the latest available methods, it may be assumed that the student's case handling methods will be crude and potentially detrimental to the patient. Every psychiatrist will know of many cases mishandled by well-intentioned but misguided colleagues who either failed to uncover psychological problems or who mismanaged them because of inadequate understanding of even the basic essentials of psychological case handling.

Current medical curricula lack systematic training in basic interview and counseling methods, even in schools having well-advanced programs in psychiatric education. Most students receive only haphazard, informal training and supervision in their actual contacts with patients. They must bungle along by trial and error, perhaps never developing real proficiency in case handling. This situation is not only wasteful, but is inexcusable at a time when proved techniques are increasingly available from the neighboring science of clinical psychology.

If it is accepted that modern scientific psychology is a basic science to clinical psychiatry, it then follows that the medical curriculum should include proper provision for the systematic indoctrination of beginning medical students, just as gross and microscopic pathology have achieved deserved status as being basic to rational medical practice.

Unfortunately, only a beginning has been made on this basic training at the present time because of the inadequacies of training facilities and available time. In our opinion, this

*See the recent reports of the APA Committee on Training in Clinical Psychology published in the *American Psychologist*, 1950, 5, pp. 585, 594. See also the progress reports of previous years published in the same journal.

training should be given by professional clinical psychologists who have both academic and clinical orientation and, therefore, are able to integrate the subject matter to satisfy best the needs of the medical students. Too often the introductory course is given by a psychiatrist who himself lacks extensive training in this basic science.

In our opinion, basic orientation to modern psychology should be given to first-year students without confusing them with an over-detailed consideration of the theoretical differences between various schools of psychology. By simply limiting discussions to factual research data, it is possible to integrate research findings into a comprehensive orientation which will serve as a solid foundation for later clinical practice. Fortunately, systematic textbooks⁵ in medical psychology are available. These are oriented to the needs of medical students.

Course Outline

The suggested course outline on page 256 represents a 16-hour course in medical psychology for first-year students. For the purpose of this paper, it has been abbreviated to outline simply the topical content of the lectures. Interested readers may obtain the full outline from the author.

Although these lectures are given formally for didactic purposes since all the material is not available in textbooks, class discussions are encouraged to promote clarification of confusing points. Selected references are given covering individual topics to supplement the required text, "Principles of Personality Counseling,"⁴ which includes both a systematic orientation as outlined in this article and elementary discussion of all known counseling methods pre-

sented on a level suitable to medical students and other counseling trainees. The text is oriented to the borderline area between clinical psychology and psychiatry, dealing primarily with the problems of "normal" patients.

A Teaching Program

It is intended that the basic interview methods will be taught with extensive use of verbatim transcriptions and wire recordings of what actually transpires in counseling interviews, giving by this means illustrative examples of both good and bad techniques. The writer has found that Snyder's "Casebook on Nondirective Counseling"³ is an excellent reference because it includes verbatim transcriptions of actual counseling sessions together with illustrative analyses of the significance of individual responses.

Where available, wire recordings and direct observation of interviews may be used with larger groups of students. These are more successful than textbook materials in arousing interest.

Students learn best of all, however, by practicing the methods directly under skilled supervision. Ideally, students should be given opportunity to interview all kinds of patients, either under the direct observation of an instructor or with wire recording so that a detailed analysis can be made of the dynamics of counseling. It is not sufficient for students simply to interview. There must be critical supervision so that mistakes can be detected and techniques polished.

Particular attention should be given to such common errors as (1) too much talking by the counselor, which blocks the client; (2) moralistic judgmental attitudes; (3) authoritarian, overdirective influence; (4) too much

SUGGESTED COURSE OUTLINE
MEDICAL PSYCHOLOGY—16 HOURS

Lectures 1-4—Historical Introduction to Modern Psychological Science.

An attempt is made to trace the historical development and contributions of the principal schools of psychology which have influenced current thinking: the contributions of behaviorism, Gestalt psychology, modern field theory, psychoanalytic psychobiology.

Lectures 5-6—Psychobiological Approaches to Personality.

A psychobiological viewpoint is offered as the most valid integration which can be made today. Lecture 5 includes discussions of levels of behavior integration, including physio-chemical, morphological, physiological, psychological and psychosocial. In Lecture 6 the principles of biologic individuation and developmental psychology are discussed.

Lectures 7-9—The Nature of Personality.

Affective-impulsive behavior with special emphasis on the nature of emotional life is discussed in Lecture 7. Lecture 8 includes cognitive factors (the nature of intelligence), and Lecture 9 deals with conative behavior including volition and motivation.

Lecture 10—The Psychology of Learning.

A general statement of the importance of learned reactions in the human. The nature of learning, methods of learning, semantics and the acquisition of conditioned abnormal patterns of behavior.

Lectures 11-12—Mental Mechanisms and the Dynamisms of Adjustment.

The concept of the personality reaction is stressed with an analysis of various mechanisms of defense and adjustment in psychosexual development, frustration and conflict, symptom formation and ego development.

Lecture 13—The Clinical Method in Science.

Introduction to elementary psychopathology, scientific concepts of normality and abnormality, and the relation of diagnosis to counseling and psychotherapy.

Lectures 14-16—Introduction to Psychological Case Handling.

How to meet and handle patients. Elementary interviewing techniques. Nondirective method of counseling is compared to the more advanced directive methods. All these techniques are discussed and integrated from an eclectic viewpoint.

leading by the counselor; (5) premature or invalid interpretations. The details of interview analysis may be obtained in sources such as Robinson.¹ It is expected that supervision of this type will be provided continuously through the four-year program in psychiatry in order to improve constantly student techniques, while at the same time exposing them to scientific methods of analysis of psychological data.

In our opinion, no medical school should lack a wire recorder; one in constant use for reproducing significant interview material. Case materials should be selected illustrating all the common problems encountered in psychiatric and nonpsychiatric patients. At the University of Vermont, counseling and interviewing methods are explained in lectures, rather than by the tape recordings which would be better for demonstration purposes.

Summary

The first-year course in medical psychology at the University of Vermont Medical College has been reorganized to place more emphasis on the basic science data and methods of modern experimental and clinical psychology. This paper presents the outline of the revised curriculum.

In our opinion, each first-year student should be given basic training in elementary methods of psychological case handling, interviewing and personality counseling. This can be accomplished through the use of formal lectures supplemented by verbatim transcriptions, wire recordings and direct participation in actual interviews. It is believed that these elementary techniques should be introduced at the beginning of the medical course because they constitute one of the most important skills of the modern physician.

REFERENCES

1. Robinson, F.P.: "Principles and Procedures of Student Counseling." New York: Harper, 1950.
2. Rogers, C. R.: "Counseling and Psychotherapy." Boston: Houghton-Mifflin, 1943. See also: Rogers, C. R.: "Client-Centered Therapy." Boston: Houghton-Mifflin, 1951.
3. Snyder, W. U.: "Casebook of Non-directive Counseling." Boston: Houghton-Mifflin, 1947.
4. Thorne, F. C.: "Principles of Personality Counseling." Brandon, Vt.: *Journal of Clinical Psychology*, 1950.
5. Yacorzynski, G. K.: "Medical Psychology." New York: Ronald, 1951.

Visual and Auditory Educational Aids in Cardiology

The use of specially developed audiovisual materials improves the teaching of cardiology to undergraduate as well as postgraduate medical students.

J. SCOTT BUTTERWORTH AND CHARLES A. POINDEXTER

AT THE New York University Post-Graduate Medical School, our interest in audiovisual teaching aids was stimulated by the difficulties we encountered in attempting to teach certain techniques in cardiology to postgraduate medical students. Fluoroscopy of the heart, for instance, was extremely difficult to teach because not more than two observers, beside the operator, were able to get an adequate view of the screen. Auscultation offered even more problems. Before our innovations only one, or at most a very few, students could examine a patient at one time.

Patients, having to endure the long process of being examined over and over by each member of a class, quickly became antagonistic to the process. Class members had a natural desire to talk among themselves and compare findings. This made it very difficult to keep down room noise. Sometimes points of dispute as to the timing of murmurs, and their presence or absence, would arise. These points, being

difficult to settle immediately, led to time-wasting discussion. In the field of electrocardiography we discovered that slides, while very necessary at times, frequently lack dramatic appeal and animation, and more often than not put the group to sleep.

Cardiology is an exceptional field for the application of audiovisual aids since the skill of a cardiologist depends directly upon how well he is trained in the use of his visual, auditory and tactile senses. For this reason and because of the teaching difficulties we had encountered, we decided to develop a program of audiovisual teaching in cardiac fluoroscopy, auscultation of the heart and electrocardiography. Our major experience was with postgraduate practitioners, but judging from work done by the new interns on our ward services, undergraduate medical schools were having similar problems.

Our major failure was the inability to demonstrate accurately to a group the findings easy for a single individual to appreciate. Nearly as important was the need to make the group active participants in the teaching process, thus assuring their constant attention. A third need was to find analytical methods capable of clarifying the points that otherwise led to time-

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consuming discussion and argument. This was particularly true in cardiac auscultation, where a wide individual variation in human hearing ability exists in the low frequency range common to most cardiac tones and murmurs.

Keeping these needs in mind we began, in 1946, a systematic probing of those types of audiovisual aids we felt might be of value. In the course of our experimenting we found that many models and pieces of apparatus we developed were too complicated, confusing or confining to be satisfactory teaching aids. These we classified as gadgets—interesting but not useful—and we discarded them.

In the following pages we will describe some of the equipment found most useful in increasing the caliber and scope of our teaching while, simultaneously, decreasing learning time. These pieces will be described individually, but they often are used together in various combinations. The experi-

enced teacher can grasp the applications quickly.

At this point, before describing the teaching aids we use, we wish to emphasize again the need for good teachers. The instructor is still the most important part of the teaching setup. No amount of teaching aids will make a poor instructor a good one. The most intolerable thing is for an instructor to lose his individuality while he comes to rely, in fact to depend, on audiovisual devices.

FLUORODEMONSTRATOR

The fluorodemonstrator (Figure 1A) utilizes heart models coated with fluorescent paint. It is used in a dark or semi-dark room and the model may be viewed directly or as an image projected on a screen.

It consists of a flat base on which are mounted a swivel platform for holding models, a movable screen, a small tubular black light (see section on black light). The apparatus uses

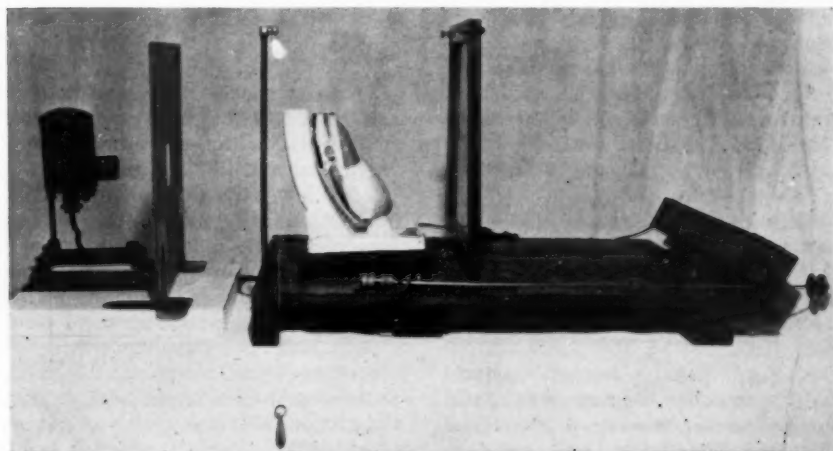


FIG. 1A—When viewed from the side, the fluorodemonstrator has this appearance. The heart model in the center is set on a turntable which can be rotated by the knob at extreme right. The light source for illuminating the model in silhouette is at extreme left. The shadow of the heart normally appears on the screen, which is in vertical position in the center.

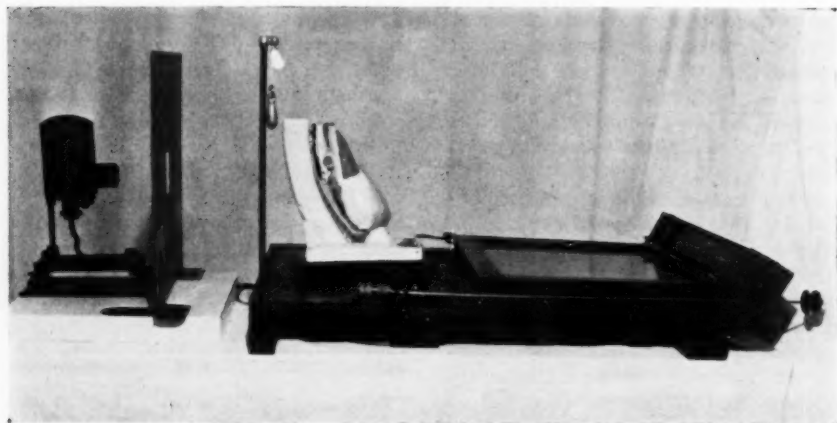


FIG. 1B—When the fluorodemonstrator screen is raised from vertical to horizontal, automatic switches at the base extinguish the lamp and turn on the black light contained in the long box tilted 45 degrees. This illuminates the model from the front.

the heart molds distributed by the American Heart Association and these are repainted with fluorescent pigments to glow under black light. New heart models of latex are now available from the American Heart Association, 1775 Broadway, New York City.

A light bulb with a small filament is located behind the model with light projected from the rear to cast a shadow of the heart model on the screen (we use the housing and lamp from an old Cambridge EKG machine). The screen may be of ground glass or, preferably, of matte back plastic, which is unbreakable.

The screen can be moved from the vertical position forward to a flat position (Figure 1B), throwing it out of the line of vision. By tripping an automatic switch this movement cuts the light from behind and turns on the black light located in front of the model. This activates the fluorescent paint on the model, making it stand out brightly in the dark.

The heart model may be rotated to any position and the shadow on the screen correlated with the visualization

of the model in that particular position (Figure 2). After study of the normal model, various pathological models are examined in the same manner.

We find that preliminary work with this system, plus the use of x-rays and diagrams, produces students ready to work by themselves in the fluoroscopy room.

BLACK LIGHT

In a darkened environment fluorescent materials emit light in the visible range only during activation by long wave ultra violet light of approximately 3650 Angstrom units. When the exciting light is extinguished, the effect is eliminated.

Excitation sources are commonly known as black light, denoting a frequency range in the long wave ultra violet (3650 A) as distinguished from other types of sources in the short wave ultra violet range, such as sun and germicidal lamps. This is important because the detrimental effect upon the eye of certain short wave sources does not occur with long wave ultra violet black light lamps.

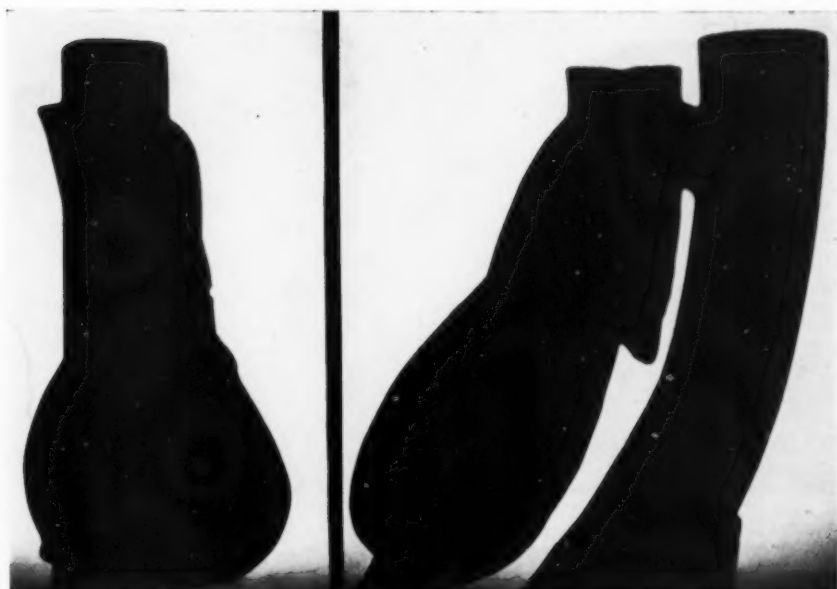


FIG. 2—When the fluorodemonstrator screen is in vertical position, the light from behind the model projects a shadow on the screen. At left is the silhouette of the normal model in the anterior-posterior position. The same model rotated to the left lateral position may be seen on the right. Pathological models naturally show marked variations from these outlines.

Black light sources generally consist of Mercury Arc Lamps of two general types:

(1) High powered mercury discharge lamps of 100 or 250 watts equipped with suitable filters.

(2) Tubular black light lamps consisting of the familiar fluorescent tube of the BL Phosphor type provided with the red purple filter surrounding the entire bulb.

The BL Phosphors generate a very blue light particularly rich in emanations at 3650 Å. These tubes may be used in standard fluorescent fixtures and are available in 6, 15, 30 and 40-watt capacities.

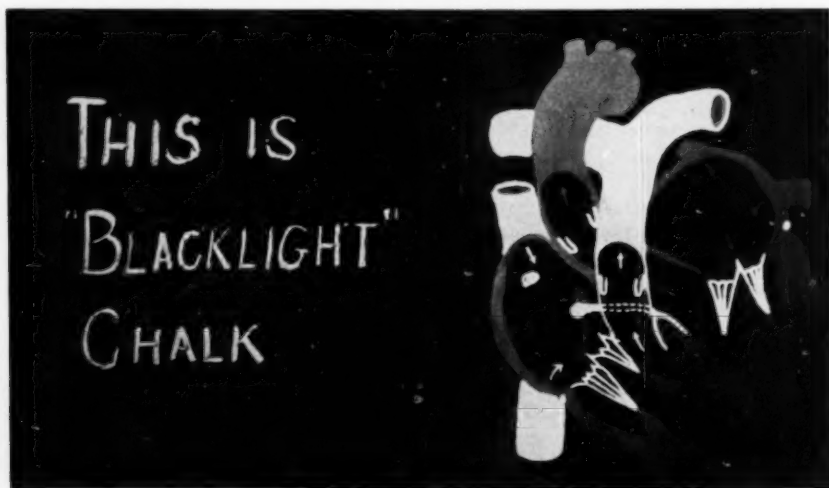
At present we are using two double 40-watt units permanently mounted above our blackboards. These provide very ample black light coverage to

the entire front of the auditorium. This black light becomes instantly available by flicking a switch.

The advantages of black light are numerous. A prime example is its use in combination with fluorescent chalk. This chalk may be used on blackboards in either a light or a dark room. Thus, a room may be darkened for movies, slides or oscilloscope demonstrations without interfering with the use of the blackboard. Used in the dark, fluorescent chalk has greater visibility than ordinary chalk used in daylight. There are two reasons for this: (1) by producing its own light, fluorescent chalk shines out against a dark background and produces a greater contrast without distraction by background objects; (2) there are no distracting highlights or reflections such as may be found at



FIG. 3A and FIG. 3B—In Fig 3A (above) blacklight chalk and/or paint has been used on an ordinary blackboard with floodlights positioned to give minimum glare. Fig. 3B (below) was taken entirely under black light. While it does not show the brilliant colors against a dark background, it gives some idea of the superiority of black light.



certain angles on blackboards illuminated with artificial or daylight illumination.

Fluorescent chalk is available in several colors. It is similar to ordinary

chalk and erases in the same manner. In daylight it has the appearance of chalk but in a darkened room, when activated by black light, it becomes brilliant.



FIG. 4—The plastic torso with heart model mounted on a universal joint may be moved throughout the usual range of positions of the heart in the chest. The hand is inserted through a circular opening in the back. The entire model weighs only a pound or two and can be picked up easily for demonstration.

We use a large schematic diagram of a heart painted on the blackboard where we indicate with fluorescent chalk the pathology under discussion.

In addition to its use with chalk, black light has other applications. For instance, we make most of our charts with fluorescent inks or paints. These are hung around the blackboard, showing well under incandescent light but more brilliantly under black light.

Fluorescent pigments also are used to prepare plastic injection specimens of the vascular bed of the heart followed by erosion of the tissues.¹ When these specimens are viewed under

black light the fine details of the vessels stand out well. Photography is much easier because of the absence of highlights.² Although our work with injected specimens has been mainly on the heart, the technique can be applied to any organ.

Black light techniques must be seen to be appreciated. Figure 3 illustrates their effectiveness in a very limited way. Figure 3A shows the blackboard under artificial light with black light chalk and the schematic diagram of the heart in fluorescent pigments. Figure 3B is exactly the same but with illumination solely from black light. Naturally the brilliant colors cannot be appreciated from the black and white photographs.

Our sources of black light are J. E. Nestell, 71 Murray Street, New York City, and Strobolite Company, 35 E. 52nd Street, New York City.

MODELS

Models are most useful for three-dimensional visualization. In addition to the heart models described above, we have used two other models. The heart is placed within a transparent torso, and constructed and wired to demonstrate electrocardiographic phenomena.

The first of these (Figure 4) is a plastic cast of a heart mounted at its base on a universal joint and suspended in the appropriate position in a transparent plastic torso. It was obtained from Scheur Creations, 307 W. 38th Street, New York City. An opening in the back enables the instructor to adjust the heart model to any desired position and is helpful for demonstrating the various positions and rotations of the heart in electrocardiography. The torso is of clear lucite, so light in weight that it may be held easily in any position. This allows the class to view the heart from various extremity positions; that is, to show the portion

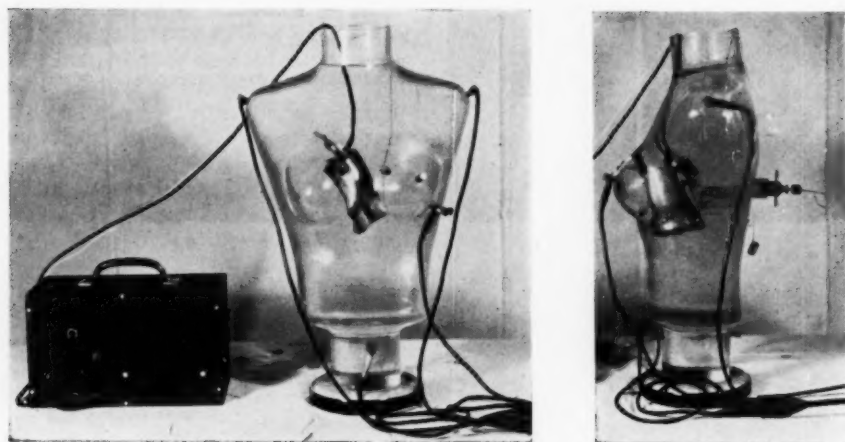


FIG. 5A and FIG. 5B—One use of the Educational Electron Cardioscope is shown in Fig. 5A (left). The plastic torso, filled with water; cables lead from the extremity positions and precordial position 4. An electrocardiogram is generated by the apparatus in the box, and this potential is fed directly into the metal heart. Fig. 5B (right) gives a lateral view of the model showing the mounting in the back which holds the model and allows rotation in two planes.

of the heart facing toward the extremities in any given position of the heart in the chest. The chambers of the heart model are painted in varied fluorescent colors so that they may be easily recognized in daylight or under black light.

The second model (Figure 5A) is especially made for teaching electrocardiography and illustrates the heart in a central position in a volume conductor. A similar plastic torso is used except that a watertight plastic joint is cemented to its back (Figure 5B). Through this joint a plastic rod with a central wire enters the interior of the model. At the end of this rod, in the usual position of the heart, a metal shell approximately the size of a heart is mounted. There is a similar inner shell completely insulated from the outer shell. These two shells serve as an electronic heart. The heart can be rotated in both the vertical-transverse and anterior-posterior axes by manipulation of the external rod and wire.

To make the model functional, the plastic torso is filled with water and a generated electrocardiogram is impressed between the inner and outer shells. This is done by rotating a disc cut to the form required to produce the pattern of a normal EKG when rotated in the path of a light beam focused on a photoelectric cell. (Courtesy of Cambridge Instrument Company.)

Binding posts are inserted through the plastic torso in the positions of each extremity and in the 1 through 6 chest positions. The electrical field set up between the inner and outer shells of the heart model extends through the water to all parts of the torso. Potentials arriving at the terminals can be picked up by any type of EKG machine. We are accustomed to using the Educational Electron Cardioscope (see below) for immediate visualization of electrocardiographic patterns.

This functional model is capable of

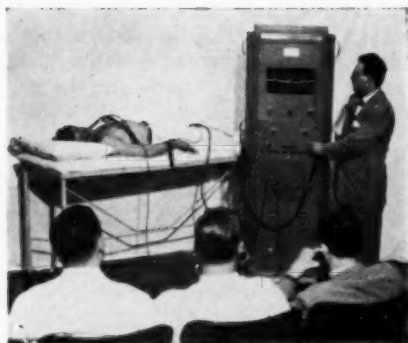


FIG. 6—The Educational Electron Cardioscope used with a patient connected by the usual electrocardiograph leads and with microphone in position on the chest. In the foreground is a small group, each person with his own electronic stethoscope. The electrocardiogram on the face of the tube was lead 2 from this patient.

illustrating many of the phenomena seen in clinical electrocardiography, such as the effect of the position of the heart in the chest on the various leads and on the vectrocardiogram. By opening the bottom of the outer shell, which is hinged and can be manipulated externally by a string, the phenomenon of the window effect of myocardial infarction is beautifully demonstrated. The comparison of V leads with CF, CR and CL leads is accomplished easily. Any type of electrocardiographic pattern—pericarditis, acute ischemia, hypertrophy—can be depicted by using an appropriate disk in the artificial EKG generator.

EDUCATIONAL ELECTRON CARDIOSCOPE

One of our most important and versatile pieces of equipment is the Educational Electron Cardioscope (Figure 6), developed over a period of time by helpful engineers and with the very real and close cooperation of the Cambridge Instrument Company, Grand Central Terminal Building, New York City.

This instrument is composed of an audio-amplifier with suitable filters, vertical and horizontal EKG amplifiers and a 16-inch television tube coated with a long persistence screen on which a bright spot is electronically swept from left to right at any desired speed.

The audio-amplifier is used with a special heart microphone and with individual electronic stethoscopes (Figure 6) to duplicate exactly what the physician hears with his own stethoscope. Each seat in the auditorium is wired so that the individual student may plug into the system with an electronic stethoscope. In this way the instructor and an unlimited group of students may examine a patient at the same time. We use from one to 50 electronic stethoscopes in our system, but more could be added easily. A filter system is provided to accentuate sounds at 40, 150, 400 or 800 cycles per second, or the system may be used with a flat response at all audible frequencies.

In addition to hearing the sounds produced by the heart, the student must have some means of time orientation. For this the patient is connected to the EKG amplifier with the usual type of cable and the electrocardiogram is immediately traced on the face of the tube by the electronic beam. (Figure 6). The speed of the sweep may be varied between 25 and 650 mm/sec. (the normal speed at which the electrocardiogram is taken is 25 mm/sec.). The long persistence screen of the tube holds the light from the traveling spot so that the pattern remains visible for several seconds or until the beam repeats its path and superimposes a brighter image. By means of a series of push buttons, any one of the following leads may be selected in any order: 1, 2, 3, V_1 , V_2 , V_3 , aV_1 , aV_2 , aV_3 , V, CR, CL, CF.

While the student is thus listening to the sounds produced by the patient's heart, he may at the same time look at the electrocardiogram and use the QRS complex for timing the first heart tone.

Whenever the instructor desires, the electrocardiogram may be replaced by the visual pattern of the heart sounds (stethogram, Figure 7A). It also is possible to superimpose the EKG on the stethogram. (Figure 7B.)

We use the Educational Electron Cardioscope extensively for teaching electrocardiography and we attempt, whenever possible, to use patients for demonstration of various electrocardiograph patterns rather than resort to use of lantern slides. By using both the horizontal and vertical EKG amplifiers simultaneously with appropriate leads, the vectrocardiogram (Figure 7C) may be illustrated.

While no provision is made for per-

manent records, it is quite feasible to photograph the face of the picture tube to make permanent recordings of stethograms, electrocardiograms or vectrocardiograms. The above illustrations have been made in this way.

The advantages of this system of teaching auscultation and electrocardiography are many:

1. Saving in manpower. One instructor can handle five to 10 times as many students with greater efficiency.
2. Increased coefficient of instruction. Students learn much more rapidly when they can hear well without interference of room noises and can simultaneously visualize what they are hearing.
3. Patient's acceptance. Patients are very cooperative since it means only one short examination by the instructor and group, compared to the tedious and often uncomfortable siege of examinations by many individuals.

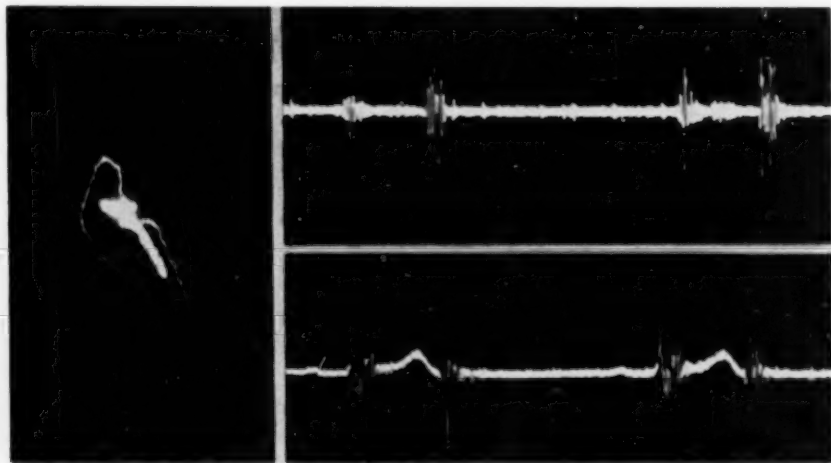


FIG. 7—Actual photographs of the face of the picture tube show: (top right, 7A), the first and second tones of two consecutive beats of a normal heart; (bottom right, 7B) the same as 7A but with the electrocardiogram of the patient superimposed at the same time to show the relation of the first and second tones to the QRS and T waves of the electrocardiogram; (left, 7C) vectrocardiogram of the same patient.

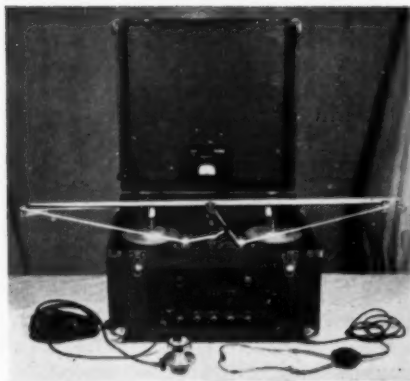


FIG. 8—Any number of earphones may be used with the tapetone recorder for heart sounds. In place is a strip of continuous tape which repeats itself once a minute. It is simple to change from the continuous tape to conventional rolls of tape, and the apparatus will function continuously for more than an hour without attention using a single 7-inch tape. Voice and heart sounds may be intermixed at will, and if a recording is unsatisfactory, the tape may be erased magnetically and reused.

4. Authority. Because of the availability of an accurate stethogram, a judge is ever present to settle arguments arising among members of the group over timing, intensity and presence or absence of sounds or murmurs.

TAPE RECORDER

The final implement of our system is a special tape recorder (Figure 8) which gives accurate reproduction for replaying of heart sounds as they are heard through the stethoscope. This instrument has been developed with the fine cooperation of the Tapetone Manufacturing Company. A new tape recorder, designed especially for heart sounds, is now available from the Cambridge Instrument Company.

The tape recorder will operate continuously for more than an hour without attention. If desired an entire lecture, including illustrative heart

sounds, may be recorded and then played at any time over the stethophone circuit. We have modified the instrument to play continuous strips indefinitely (continuous strip illustrated in Figure 8) so that students may have ample time to concentrate on any type of tone or murmur.

Tape recording offers an immediately available library of heart sounds if patients are unavailable. This is often the case with such transitory conditions as pericardial friction rubs. It also is useful for demonstrating changes in the auscultatory findings of an individual patient over a period of time such as may result from the healing of a lesion, increasing valvular damage or operative intervention. It is most satisfying to be able to reproduce at any time the actual sounds of the heart for correlation with post-mortem findings.

Finally, we would like to point out that, in addition to its value in teaching, some of this equipment has other applications. The Educational Electron Cardioscope will, when combined with proper equipment, show the electrokymogram or ballistocardiogram or changes in pressure and has wide application in any research project where nerve or muscle potentials are produced. We have found it very useful for the operating room during cardiac surgery and in the catheterization laboratory to watch the rhythm of the heart during these procedures.

BIBLIOGRAPHY

1. Demonstrations of the Coronary Arteries with Nylon. Wagner, A. and Poin-dexter, C. A. *Am. Heart J.* 37: 258, 1949.
2. Medical Radiography and Photography. 27: 14, 1951.

An Integrated Program for Clinical Cancer Instruction

Three kinds of clinical facilities are used in a successful program of undergraduate instruction in detection and therapy of neoplastic disease.

WALTER J. BURDETTE

SEVERAL MEANS FOR meeting increasing public and professional demand for early detection and adequate therapy of neoplastic disease have developed during the past few years. Improved clinical facilities have as their purpose not only diagnosis and treatment but also the education of the patient, his family and friends.

The medical faculty may use these clinical facilities for instruction of students as well as patients. This paper will be confined to this phase of cancer teaching, omitting the other divisions included in an integrated program such as lectures, reports, motion pictures, seminars and routine ward rounds.^{3, 6, 7} Similarly, the instruction of fellows and house officers in oncology will be mentioned only in passing.

Recent educational campaigns conducted by agencies such as the American Cancer Society and the oncology programs in most medical schools, usually instituted with the aid of teaching grants from the Public Health Service,² have focused attention on this subject.

In our experience, clinical cancer instruction has been carried out in a tumor clinic with an associated

staff meeting, cancer detection clinic and tumor conference. Each is most effective in certain spheres. The diagnosis and treatment of cancer has been taught most effectively in the tumor clinic. The cancer detection clinic is most useful in teaching cancer control. In the tumor conference an opportunity for intensive study of specific types of cancer is offered.

Advantages of University Cancer Clinic

The university cancer clinic has the advantage of having a suitable staff, clinic facilities, equipment, usually the approval of organized medicine, and has little difficulty meeting the minimal standards of the American College of Surgeons.¹

The organization may be either departmental or interdepartmental. From the standpoint of assigning students and obtaining time in the curriculum, it is somewhat simpler when it is a departmental clinic with associated interdepartmental conferences and consultants.

The personnel in an interdepartmental clinic should consist of a surgeon, pathologist, radiologist and internist, with the other specialties represented whenever justified by the type and number of patients. A permanent staff is more satisfactory than rotating assignments. Included in their duties should be a definite teaching assignment and they should devote part of their time to explaining pro-

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An Integrated Program for Clinical Cancer Instruction

cedures and decisions to the students.

In addition to a secretary and nurse, the social worker has perhaps one of the most important positions in the cancer clinic; her functions should be made clear to any students who attend clinic sessions. An interested and responsible director of the clinic will provide for effective organization of the whole.

Adequate space is an important requirement in avoiding patient delay. The doctor then does not have to wait for patients to be prepared or to leave following examination. If possible, the number of examining rooms should exceed the number of people on the staff who are attending the clinic. Some provision should be made for cancellation of appointments.

The time the patients are waiting may be spent in education by the use of visual aids or a talk by one of the members of the staff. This affords an excellent opportunity for the student to learn how to handle such inquiries.

Student participation in the clinic should come in the fourth year. Having had one year on the wards, the student is apt to assimilate more in the short time available in a clinic and also can take a greater part in examining the patients and obtaining histories. He should at least take the patient's history if he is to profit from the clinic. Return visits of each patient should be handled by the same attending physician and the same student, within the limits of the curriculum. This can be aided by assigning both student and patient to a given room or office.

Because of the generally crowded medical curriculum, this may be the students' only opportunity to observe treatment with radium, x-rays and radioactive isotopes. Although few of the students ever will administer x-ray therapy, we believe that

it is important for them to know when it should be given and what represents adequate irradiation.

Instruction in surgical pathology also may be given by using slides of previously biopsied lesions. The technique of biopsy also may be introduced in the clinic. Participation in the cancer clinic thus should help the student correlate his knowledge and bring it to bear on a given cancer problem.

One of the most important divisions of the tumor clinic is the follow-up carried on by the social worker. The form letters which are sent out to the patients and the doctor, the technique of personal interview and the actual data obtained should be presented to the student by the social worker during the clinic.

This also is a good time for instruction concerning records and abstracts. To the average medical student this may seem somewhat dull, but he should learn that such work is a vital and integral part of the cancer clinic organization. Charts and exhibits may help in the presentation. If visiting nurse service is available, full advantage of observing terminal care should be afforded the student. A tumor registry also is most desirable. It is best conducted with the help of a statistician and provides instructive data on the objective evaluation of therapy.

The staff meeting or tumor board may solve some of the more difficult problems of management. It also serves as a means for correlating the activities of departmental tumor clinics.

At such a conference the student should present the case. This usually is his only opportunity to participate actively except in asking questions following each presentation. A limited schedule may modify attendance, but

at least students can be present when their patients are to be presented. Otherwise, the intern on the service must be responsible for adequate presentation of the case. The student should understand he is to assume responsibility for the presentation, including laboratory data and roentgenograms. Presentations usually are best when the student dispenses with the chart and talks extemporaneously or from notes.

After the case presentation each member of the panel should discuss the case in the light of his special knowledge and the chairman should summarize the conclusions at the close of the session. If this is not done the students, who are alert to any disagreement between professors, often are confused by different opinions. If different recommendations cannot be reconciled, at least the rationale for each position should be made clear to the students. Illustrative materials such as specimens and lantern slides are effective only if they do not detract from the case.

These conferences have proved to be valuable, not only to medical students, but to residents, fellows and practicing physicians. One of our most interested groups is a visiting class of dental students.

Photographing patients when they appear for the conference offers an excellent means to record the appearance of a lesion before and after treatment and to build a collection of illustrations for later instruction.

Our policy has been to append a sheet to the chart within 24 hours, stating the recommendations of the conference. It is not compulsory for the doctor who has charge of the patient to follow the recommendation. After the presentation of one group of 43 cases in our conference, it was found that recommendations were

followed in all but six cases. In none of these six was the patient improved by the alternative treatment.

Value of Detection Clinics

The cancer detection clinic usually is somewhat different from the cancer clinic of the university hospital in its aims and scope. Frequently it is a private clinic although of course no patient is denied entrance. Since only 1.5 per cent of such patients actually have a tumor detected, the justification for such an organization is usually that of education plus the fact that positive diagnoses of other conditions are made incidentally in about 30 per cent of the cases.⁴ Controversial points about these clinics usually are overcome when they are used for university instruction to prepare the medical student for making his future office, at least in part, a cancer detection center.

Our detection clinic is opened each session with a talk to the patient. This is followed by a question period at which students are present. Each student receives a copy of the talk, the cancer literature given to the patient, the record form used in the clinic and the follow-up data sheets, together with a report of the clinic during the previous fiscal year.

The cancer clinic is limited to a very small number of students. This seems better where private patients are concerned, and the individual teaching presents a great many advantages. It is possible for the student to see something of the private patient's relationship to his doctor and to observe the proper type of examination performed by specialists.

The public health aspects of cancer control and the function of such a clinic in the community at large are impressed upon the student during his visit to the clinic. He remains in the

room with the patient until an internist, a surgeon and a gynecologist have made their individual examinations. He is taught how to take vaginal smears and observes sigmoidoscopic examinations when they are done.

History, physical examination, x-ray studies of the chest, urinalysis, complete blood count, stool studies, sigmoidoscopy, vaginal smear and, if possible, gastrointestinal series and barium enema should be included in the work-up. Studies of the alimentary tract are done only if there is some indication. Patients are referred to their doctor, to whom a complete report of the findings is sent. Follow-up is continued until suggested therapy has been done or rejected by the patient. Ordinarily he does not return to the clinic.

Tumor Conference for Graduates

The tumor conference may be more beneficial to the graduate in medicine than to the undergraduate. It is more of a study unit, it meets less frequently and is concerned with more formal and general presentations of the subject matter in oncology. In our institution it is a part of the extension teaching of the university and is designed as much for the general practitioner as the undergraduate. The desire for such a conference should originate within the medical profession. Such a study unit can be useful at a medical center and also is flexible enough to be taken to other medical groups by the faculty.

These meetings have been divided into three parts. Case presentations, which are given in a manner similar to those described for the previous type of conference, are most important and usually are popular. The cases presented preferably should be those supplied by the local group. The

second part is a clinicopathologic presentation of a case of neoplastic disease. As the third portion of the conference, formal papers are presented on current techniques, the results of research and progress in the diagnosis and therapy of cancer.

It is most important to have an overall plan for such meetings in order not to be repetitious and to insure the steady attendance of students and other. The inclusion of a visiting speaker often is an additional stimulus. These meetings are successful only if they are approached as an exchange of ideas between local groups and university clinicians.

Every school has individual problems in the administration⁵ of a clinical cancer program. Development of some program in those institutions not having an associated cancer hospital, however, should help undergraduates and graduates in medicine acquire appropriate skill for early diagnosis and treatment of the cancer patient. This clinical instruction can be one of the most gratifying portions of the oncology program in any school of medicine.

BIBLIOGRAPHY

1. Crowell, B. C. and Branch, C. F.: Cancer Clinics—Cancer Diagnostic Clinics—Cancer Detection Center. Minimum Standards and Their Amplification. *Bull. Am. Coll. Surg.*, 32: 131-141, 1947.
2. Kaiser, R. F.: The National Cancer Teaching Program—A Review. *Public Health Rep.*, 65: 1397-1402, 1950.
3. Lawrence, E. A.: Coordination of Cancer Teaching. *J. Med. Ed.*, 26: 44-48, 1951.
4. Relation of Cancer Detection Centers to Medical Practice. *Bull. Am. Coll. Surg.*, 32: 143, 1947.
5. Steiner, P. E.: Cancer Training Grant Programs as They Appear to a Council Member. *J. Med. Ed.*, 26: 3-6, 1951.
6. Taffel, M.: The Utilization of a University Cancer Clinic for Teaching Purposes. *Conn. State Med. J.*, 12: 532-535, 1948.
7. Wangenstein, O. H.: Cancer Clinic in a University Hospital. *Surg. Gynec. & Obst.*, 64: 502-503, 1937.

Assessment of Student Knowledge on the Subject of Cancer

Significant variations in scores between schools and between classes were found when medical students were tested for cancer knowledge.

HOWARD O. BIERMAN, JAMES N. McCLELLAND, DAVID W. GALLOWAY

IN 1947 the National Cancer Institute established a fund from which grants up to \$25,000 per year were made to medical schools for improving medical school instruction in the subject matter of cancer.^{1, 2} To measure the effectiveness of efforts to improve cancer teaching at the University of California School of Medicine, an achievement test of cancer knowledge was developed.³

Widespread interest in the test led to the establishment of a special project for administering the test to students in other schools throughout the United States in 1949. (Grant CS-1020, Cancer Control Branch, National Cancer Institute, National Institutes of Health, Public Health Service.) Results of this initial administration have been published.⁴ This report describes additional findings resulting from extended use of the test for the second consecutive year.

The second (1950) national edition of the test contained 150 questions of the five-choice, multiple-response type. These questions were obtained from suggestions throughout the United States, and were subjected to careful scrutiny by the staff of the project for good item construction

and for subject matter content. One hour and 40 minutes was allowed for taking the test.

An example of the test items is:

Carcinoma of the gall bladder is almost always:

- A. Associated with gallstones.
- B. Related to infectious hepatitis.
- C. Noted to metastasize to the adrenal.
- D. An epidermoid type of cancer
- E. Revealed by following Courvoisier's law.

While the test has been revised somewhat from year to year in order to sample the whole field of cancer more systematically (Table 1, next page), a large portion has been kept identical to compare student achievement in successive years.

Test Results

The 1950 edition of the test was given to 12,624 individuals in 43 schools including 30 schools where it had been given in 1949. The schools in the program were so distributed geographically as to form a representative cross section.

Averages for the various groups taking the test in 1950 indicated a relatively continuous increase in learning from the premedical years through all levels of the school into the postgraduate period (Figure 1).

The premedical group consisted of 50 medical school students who took

Dr. Bierman is associate clinical professor of oncology, Dr. McClelland instructor in medical education, and Mr. Galloway statistician at the University of California School of Medicine, San Francisco. The authors also are associated with the Laboratory of Experimental Oncology, National Cancer Institute, Public Health Service.

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TABLE 1. Cross Index of Distribution of Items of Achievement Test 1950 Edition
Physiological System or Anatomical Site (Number of Items)

Questions Primarily on	S	Skin	Neck and Head	Lungs and Medastium	Endocrine Glands	Digestive System	Urinary Tract	Male Genitalia	Female Genitalia	Breast	Bone	Soft Tissue	Nervous System	Lymphomas and Leukemias	Experimental and General	Total Number of Items	Percent of Test
Diagnosis	4	3	3	3	7	3	2	5	3	3	1	5	3	0	45	30	
Natural History	7	6	6	5	13	1	4	7	5	2	1	5	4	7	73	49	
Treatment	4	7	0	2	3	1	4	1	3	0	0	1	5	1	32	21	
Total No. of Items	15	16	9	10	23	5	10	13	11	5	2	11	12	8	150		
Per Cent of Test	10	11	6	7	15	3	7	9	7	3	1	7	8	5	100		

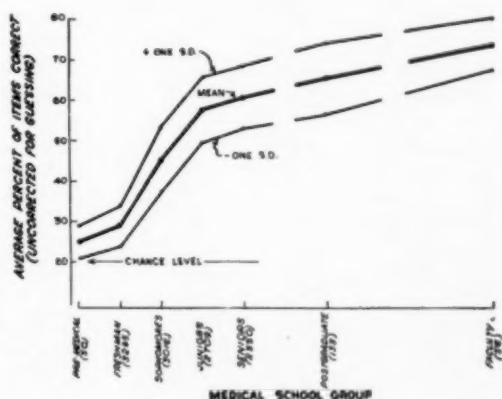
the test in the fall during their first few days of medical school. Their average score was only 5 per cent above that which would most likely result from pure chance. A similar result was obtained on the 1949 test with a group of premedical students in a different school. This is evidence that the test does measure those aspects of cancer taught in the medical school, in contradistinction to the cancer information known to the lay public. The mean for postgraduate students (Figure 1) included scores made by interns, residents, fellows and others. The faculty group included only physicians engaged in advanced instruction.

It was the consensus among the local cancer coordinators or other administrators, most of whom actually took the test under test conditions, that except for minor objections to a few items, the test was valid. Furthermore, the significant increase (greater than the 1 per cent level between every pair of consecutive groups) in score on the test from one academic

level to another was contributory evidence of the validity of the test as a device for measuring student learning in this field.

The standard deviations of individual scores (Figure 1) indicate the wide variation in student learning at

FIGURE 1—Average scores and variance among scores of individuals in seven medical school groups taking the 1950 edition of the achievement examination for medical students in the subject matter of cancer. Approximately two-thirds of the scores in each group are within one standard deviation of the average score for the group.



each class level. Thus, the upper 40 per cent of the junior students and the upper 5 per cent of the sophomore students performed as effectively as the average senior.

Variance in score within individual classes and between classes at the same academic level was likewise very great (Figure 2). For example, almost all the senior students in schools F and Y scored above the senior national average. Most of the students in the junior classes at schools J and Y scored higher than the national average, while most of the juniors in schools P, BB and KK scored below the norm. In five sophomore classes (E, Q, S, V and Y) most of the students scored above the national norm, and in three classes (U, HH and KK) most students were below the norm.

Some comparisons between schools at different academic levels also were very striking (Figure 2): five junior classes had average scores above the senior norm, and six senior classes had average scores below the junior

norm. In at least three schools (E, V and Y) 15 per cent or more of the sophomore students scored above the seniors' norm.

The relationships shown graphically in Figure 2 give rise to numerous questions regarding pedagogy, involving spaced learning, medical maturity of the student, clinical versus lecture methods, etc., which only can be answered through continued study of the problems of instruction and learning.

Determination of the test reliability in a conventional manner⁵ indicated that the test provided accurate and consistent scores. The comparatively low reliability coefficient at the freshman level ($r = .52$) probably reflected the lack of instruction at this level; whereas reliability coefficients at the sophomore ($r = .79$), junior ($r = .82$) and senior ($r = .79$) levels indicated the test to be a suitable medium for interclass comparison, and the overall reliability coefficient of .94 compared favorably with the best standardized tests.

To compare directly student performance over the two years, 90 items of the 1949 edition of the test were repeated identically in the 1950 test. The greatest improvement occurred in the groups of items relating to dermatology, pathology, oncology and radiology. The most marked decreases in score appeared on items relating to pediatrics and surgery. Remaining groups of items showed no consistent trends.

A second grouping of test items, based on anatomical locations of the

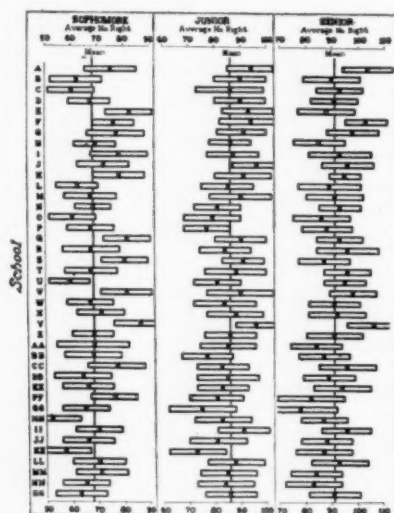


FIGURE 2—Graphic comparison of scores, by class, on the 1950 Achievement Examination of Medical Students in the Subject Matter of Cancer. The center of each bar is average score for the class. Each bar is two standard deviations long and includes in its length approximately two-thirds of the scores in the class.

Assessment of Student Knowledge on the Subject of Cancer

neoplasms considered, also yielded data on improvement in learning. Consistent increases in score were found in groups of items concerned with the skin, lung and mediastinum, and experimental or general subjects. A consistent negative change was observed in items concerning the head and neck, but in most categories no particular trend was evident. When all sub-categories were combined and the average improvement calculated for the entire 90 identical items, no average improvement greater than 1 per cent was obtained except at the junior level. At that level the average increase was 2.1 per cent for the 90 items.

There was considerable variation in improvement from school to school. In some schools one class

showed marked improvement or retrogression in most of the categories while the other classes showed little change (Figure 3). In other instances, whole schools exhibited trends upwards or downwards in all topics, while some schools showed a marked change in only one category.

An analysis of the proportion of students in the highest and lowest quarters of the senior class correctly answering each item as compared with the proportion for the top 100 faculty and postgraduate students taking the test revealed striking results (Table 2).

Of great importance were student responses at the senior level which showed the extent of learning among students who were about to be grad-

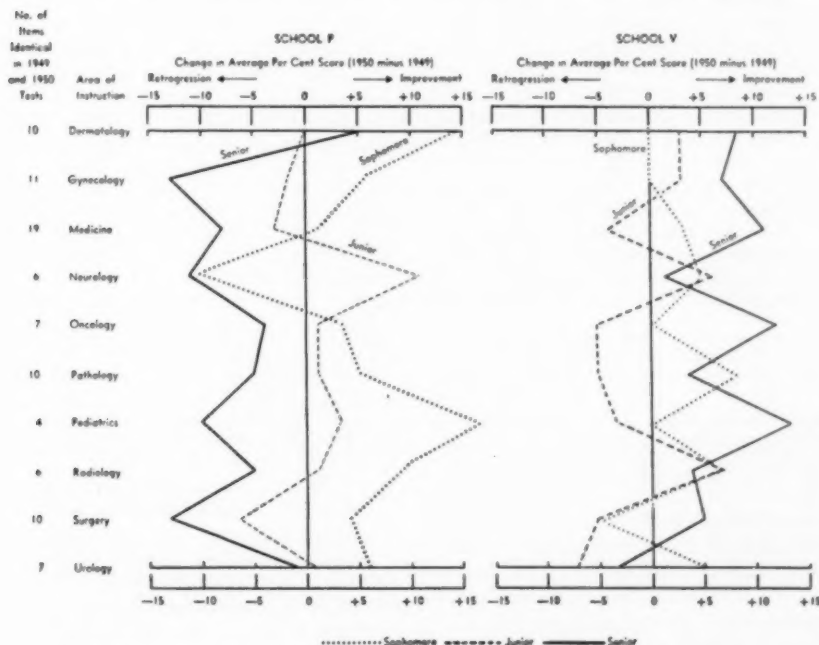


FIGURE 3—Comparison of two schools in which 1950 senior scores were markedly different from 1949 senior scores. In school P 1950 seniors scored lower than 1949 seniors in all categories but dermatology. In school V 1950 seniors scored higher than 1949 seniors in all categories but urology.

TABLE 2. Comparison of Answers of Upper Quartile of Senior Sample, Lower Quartile of Senior Sample, and Validating Group on 30 Test Items Showing Large Inter-Quartile Differences.

Description of Subject Matter of Items	Per cent answering correctly		
	Low Seniors	High Seniors	Validating Group
Etiology of multiple neurofibromatosis.....	74	98	99
Treatment of carcinoma of thyroid.....	72	97	97
Relation of parathyroid adenoma to kidney pathology...	60	97	98
Etiology of breast tumors in mice.....	70	96	95
Therapy for fibroma of the tongue.....	72	96	99
Significance of asymptomatic anemia.....	69	95	91
Symptomatology of granulosa cell tumors.....	58	94	89
Relation of gall bladder carcinoma to gall stones.....	55	92	96
Natural history of primary carcinoma of the liver.....	54	91	89
Therapy of fibroma of the tongue.....	62	91	85
Treatment of nasopharyngeal lymphoepithelioma too extensive for surgery.....	60	90	97
Precancerous conditions in G.I. tract.....	65	89	94
Diagnosis of case history of thymoma.....	43	89	98
Symptoms and histo-pathology of adenoma malignum.....	39	88	89
Metastasis of nasopharyngeal carcinoma.....	57	86	89
Frequency of occurrence of specified precancerous skin lesions.....	48	86	92
Cause of deaths from carcinoma of the cervix.....	59	86	88
Arsenic as a carcinogen.....	42	83	92
Clinical appearance of hemangioma of the tongue.....	56	81	89
Neoplastic nature of mycosis fungoides.....	32	78	85
Pathology of cystic hygroma of the neck.....	29	75	91
Metastatic spread of adenocarcinoma of the kidney.....	40	74	88
Symptoms of pancreatic islet cell tumor.....	45	70	90
Etiology of adenofibroma of the breast.....	38	69	90
Biology of adenocarcinoma of the pancreas.....	14	68	80
Pathology of basal cell carcinoma.....	42	67	82
Prognosis of various types of carcinoma of the breast.....	23	64	88

uated and thus end their formal medical school training. This cross section of senior students in 43 medical schools throughout the United States showed that some aspects of the subject are understood by the vast majority of seniors and hence need no additional emphasis. For example:

1. Ninety-nine per cent chose biopsy as the best technique for positive diagnosis of skin malignancy.

2. Ninety-seven per cent knew that the most common initial finding in carcinoma of the breast was a lump.

3. Ninety-six per cent recognized need for radical excision of pigmented nevi.

4. Ninety-five per cent were aware that nitrogen mustard is being used with some effect in Hodgkin's disease.

5. Ninety-five per cent knew that extension of lymph nodes was most important in the prognosis of breast carcinoma.

6. Ninety-four per cent were aware

Assessment of Student Knowledge on the Subject of Cancer

that testosterone is used effectively in the treatment of advanced carcinoma of the breast.

On the other hand, there were many important aspects of the subject about which some seniors were poorly informed:

1. Eighty-one per cent were unaware that the most common presenting complaint in epidermoid carcinoma of the nasopharynx is cervical adenopathy.

2. Sixty-five per cent did not know that chorionepithelioma occurs in either men or women.

3. Fifty-seven per cent were not aware of the apparent influence of heredity in the etiology of retinoblastoma.

4. Fifty-six per cent did not know that a syndrome of uremia, hyperglobulinemia and hypercalcemia was most suggestive of multiple myeloma.

5. Fifty-three per cent believed that neuroblastoma of the adrenal is frequently associated with abnormal secretion of adrenal hormones.

6. Forty-five per cent were not aware of the suspected neoplastic nature of mycosis fungoides.

7. Forty-five per cent did not know that lymphatic leukemia was the type of leukemia most often encountered in early childhood.

Future editions of the test will be administered to almost all the students who took the test in 1950 and 1949, and who are still in school, as well as to those who have entered school since the beginning of the project. As the project is continued, additional data on the development of student knowledge about cancer will become available. This should help the schools in their efforts to improve methods of instruction.

Conclusions

1. The 1950 edition of the Achievement Examination for Students of Medicine in the Subject Matter of Cancer was administered to 12,624 persons in 43 schools.

2. Individual student and class scores progressed from only slightly higher than that expected from chance at the freshman level to more than 85 per cent for a few of the outstanding seniors.
3. Variation in average score from school to school was considerable, one or two of the highest scoring sophomore classes having averages higher than some lower scoring senior groups.
4. Only at the junior level were the 1950 scores consistently higher than on the same items when used in 1949.
5. In some segments of cancer knowledge senior students appeared consistently well informed. These areas included importance of biopsy, the diagnosis and treatment of breast cancer and malignant melanoma and the uses of newer chemotherapeutic agents. Many students were poorly informed on diagnosis and treatment.

REFERENCES

1. National Advisory Cancer Council: Cancer in the Medical School Curriculum, *J. Nat. Cancer Inst.*, 8: 1-6, 1947.
2. Kaiser, Raymond F.: Cancer Teaching in Medical Schools, *U. S. Public Health Reports*, 64: 757-764, 1949.
3. Bierman, H. R., and McClelland, J. N.: A Study of Methods for the Improvement of Cancer Learning in the Medical School, *J. A. A. M. C.*, 24: 351-362, 1949.
4. Bierman, H. R., and McClelland, J. N.: An Achievement Examination for Medical Students in the Subject Matter of Cancer. *Public Health Reports*, 66: 769-778, 1951.
5. Adkins, Dorothy C.: Construction and Analysis of Achievement Tests, U. S. Government Printing Office, Washington, 1947.

Costs of Medical Education

A FEW YEARS AGO a dean of a medical school, when asked the cost of medical education in his institution, would be apt to divide the annual operating budget by the number of students (excluding income from hospital and grants for research from outside agencies), and give the answer as \$2,800, or thereabouts, per student per year.

Today there are many people who are not willing to accept these rough figures. Medical students want to know what part of their education is paid for by their \$600 to \$700 annual tuition. Industrialists asked to make corporate grants to medical education want to know how much is needed and specifically for what. Legislators, university presidents, sympathetic foundations and interested medical alumni all ask these same questions.

It is not surprising, therefore, that the finance officer and the dean of one of our medical schools have pooled their efforts in a valiant attempt to answer for their school. They point out¹ the chief factors that determine the costs of medical instruction in any school and quote figures to show how unsatisfactory were the results, either on the basis of "hourly training cost per undergraduate student," or on the basis of "teaching load and hourly

teaching cost." They come to the conclusion, however, that "if the members of the community at large who benefit from these additional services reimbursed the university for them, the average annual net cost of educating an undergraduate medical student would be less than \$1,000 . . ."

This figure has great value in that it gives due recognition to the too frequently ignored yet important fact that medical schools devote a great deal of their resources to carrying on research, providing medical service to their local area, and contributing to the training of undergraduate university students, dentists, nurses, laboratory and x-ray technicians and other ancillary personnel, interns, residents and graduate students, and to the offering of postgraduate courses for physicians. Therefore, only a part of their effort is accurately chargeable to education of undergraduate medical students.

Important as this contribution from Duke is, however, there remains much to be done before we have a really satisfactory answer to the problem. Some of the costs of research are really chargeable to the education of medical students; for example, where it is the teacher's research that is largely instrumental in making him an alert, stimulating teacher, radiating interest and enthusiasm in his special field of study. Many of the clinical teacher's hours in the hospital and outpatient department with students are chargeable to medical education even though they are

(1) Gerhard C. Hendricksen, CPA; Wilburt C. Davison, M.D.—"Cost of Undergraduate Medical Instruction in an Endowed School"—*Journal of American Medical Association*, Vol. 149, No. 2, May 10, 1952.

at the same time devoted to diagnosing and treating the community's indigent ill. And finally, to a considerable extent the opportunity for research is an essential part of a medical teacher's life and without it the relatively meager salaries offered would be totally inadequate to command the services of competent teachers.

This is an important problem which demands an answer but it is the responsibility of medical educators to provide an answer that takes into consideration all of the realities of the situation.

A Faculty Register

THIS MONTH's lead article is the first report based on the faculty questionnaires prepared and distributed in January 1951 by the Association of American Medical Colleges.

These forms were filled in by the faculty member himself and, when received in the Association office, were forwarded to the Health Resources Staff of the Office of Defense Mobilization where they were coded and put on punched cards.

The original forms and a duplicate set of the cards have now been returned to the director of studies. They will form the basis for a faculty register which will be maintained by the Association and kept up to date by biennial revisions.

A form of this type can be answered with varying degrees of ease and accuracy. Such items as age, degrees held, teaching position, departmental affiliation—in fact all of the first dozen items (see page 235)—can be assumed to be reported with almost complete accuracy.

Item 13, on the other hand, which concerns the hours of time devoted to teaching, research and administration, is of a different type. By re-

questing the number of hours a faculty member devotes in his typical week to each type of work, and then the number of weeks he works on this schedule in a year, accuracy of answer is promoted. Even the most conscientious and meticulous person, however, may have difficulties in making such estimates, and the harassed and rushed teacher may reveal information of more psychiatric than factual significance. Yet the faculty person himself probably can make the best estimate of his time and the gross tabulations may well reveal institutional and departmental differences of significance.

Information about the teaching staff supplies one needed element for the understanding of the functioning of medical education. The establishment of this faculty register thus may be a matter of some importance.

For example, the high cost of medical education is much in the limelight today. It is pertinent to note that of the 15,563 persons who are engaged in teaching in medical schools, almost half receive no direct payment from the medical school for such teaching.

A second article dealing with differences among the medical schools is in preparation now and other reports may be expected.

The Cancer Quiz

EACH SCHOOL which participated in the study reported in this issue by Dr. Bierman and his associates has long since checked the performance of its students in comparison to those of other schools. The cancer quiz is more than a game, to be sure, but it nevertheless has many of the elements of an intercollegiate contest. Its serious values are many and obvious.

Interschool and interclass comparisons of knowledge about cancer

are striking and significant. For example, if we assume the validity and comprehensiveness of this test, many of the sophomores at one school know more about cancer than the average seniors at another school.

Interesting as such an approach is, one must question the widespread use of this "special examination" method as a means of stimulating an interest on the part of the faculty and creating pressures for more effective teaching of a single subject. What if many other health groups and organizations used this same approach? A peculiarly distorted curriculum might result.

The examinations of the National Board of Medical Examiners, as now being developed, probably are the best device for comprehension of the entire medical curriculum and should gain more favor than the approach by special groups.

TV Channels and Medical Colleges

THE MEDICAL COLLEGES in the United States share with other educational institutions the immediate problem of securing channels for educational television.

On April 14, 1952, the Federal

Communications Commission set aside a channel for educational purposes for every community that might be expected to use such a channel. The period of grace is for one year only.

Others who are interested in these channels may compete for them after this time unless specific plans are made for their use by educational bodies. Medical educators must act very soon to insure their right to use these channels.

It is essential that the medical colleges cooperate with other local educational and cultural bodies. Television is costly. Only a very few educational institutions are large enough to support a station alone.

Colleges may receive initial help and guidance from such outside sources as the Joint Committee for Educational Television, 1785 Massachusetts Ave., N.W., Washington, D. C. A more important parallel step, however, would seem to be the immediate formation of an active local committee to represent all local educational interests.

To permit the present opportunity to pass without careful study and considered action is tantamount to deciding that television will play no role in the future of medical education.

Our Readers Write

Close Ranks!

To the Editor:

THE MEDICAL SCHOOLS of the United States have entered upon a period of ordeal engendered by the lack of any solution to their financial predicament. Although many of the state schools have had their budgetary troubles, the difficulties have been most acutely felt in the privately supported schools. Assistance from the National Fund for Medical Education and from alumni funds has been inadequate, and the situation has been allowed to go on to the point where a number of schools may be forced to close their doors unless help is forthcoming within three or four years.

In such a time of crisis when the very survival of a number of our medical schools is at stake, it would seem appropriate for even such rugged individualists as physicians to close ranks and to present a united front. Unfortunately, organized medicine as represented by the AMA, and medical education as represented by the AAMC, have taken different positions both as to the seriousness of the situation and the proper way to

deal with it. If there is a lack of understanding on this matter in the minds of the medical profession at large, are not medical educators themselves in part to blame?

There is, indeed, room for better communication and better understanding between medical educators and medical practitioners at the local level. It is not so much a matter of town and gown antagonisms as of simple indifference. All too often faculty members take no part in county medical society activities, and many do not even belong to their local societies. Secure in the academic cloister, standing aloof from the medicopolitical fray, they deplore without deigning to participate. Responsibilities cannot be shrugged off that easily. In the crucial years that lie ahead, organized medicine needs the counsel and guidance of the leaders in medical education no less than medical education needs the support of organized medicine. Let the professors get off their high horses and let their voices be heard in the grass-roots discussions. If ever there was a worthy project in medical education, this is it.

James Faulkner, Boston University

The purpose of this section of MEDICAL EDUCATION is to provide a sounding-board for ideas, suggestions, comments or criticisms. Opinions on any subject pertinent to medical education are welcome, and readers of the Journal are invited to contribute.

Material for this letters-to-the-editor department should reach the Journal office, 185 N. Wabash Ave., Chicago 1, by the 10th of the month preceding publication.

Audiovisual News

Buy Them and Edit Them

MOTION PICTURES ostensibly made for the teaching of medicine number many thousands. Many more thousands are made for teaching the other biological sciences. Hordes of health films are made for the lay public. Good or bad, crude or professional, they all have one thing in common: they are mines of film footage potentially useful for the medical school classroom.

Most teachers of medicine are deluded by the encapsulated appearance of motion pictures into thinking that every film is an all-or-none proposition, that the ideas of the author and their expression in film are rigid and cannot be manipulated. This rank fallacy is an enormous obstacle to the wide use of motion pictures in medicine and to their incorporation into that arena of healthy individualism called the medical school.

Films are plastic in many ways. One important way to bend them to personal needs is to buy them and edit them.

A veteran teacher of preventive medicine, Dr. Milford E. Barnes, professor of hygiene and preventive medicine at the State University of Iowa school of medicine, has for years been building a working library of motion pictures abstracted or re-edited from other films, films purchased for no other purpose than this mining of their raw material. No more coldly sensible tactic has been reported yet for separating film wheat from film chaff, or for hand-tailoring the work of others to the special needs of a medical teacher and his course.

In view of the high rate of medical film obsolescence, the mixed audience levels for which most films have been misdesigned and the extreme

range of quality in present film stocks, this procedure is logical and worthy of the wide emulation. The method is easy and results are excellent.

The success of Dr. Barnes' pioneering program depends, to a large measure, on a few essential elements. In pursuing these, there is active participation by the departmental staff—professors Roland Rooks, Kenneth MacDonald and Marcus P. Powell:

1. A moderate annual film budget permits year by year acquisition of new films.
2. Staff members are constantly on the search for new film releases which appear to be of interest.
3. Regular film previewing identifies not only films which seem worth their purchase price, but also those which should be borrowed.
4. Films purchased are edited by staff members as each conceives alteration of the original will help his own teaching problem.
5. Efficient and easy projection for all types of visual materials has been organized for the classrooms and regularly used by the department.

Films of any length can be interlocked with slide projection and with all other media of instruction.

The problems encountered in carrying out this concept of film conversion are complex but readily solvable. While the search for acceptable new material in this time of medical film chaos presents difficulties, persistence and experience help in the constant process of discovery. The uneven quality of films brought in for staff consideration, along with the high rejection rate, makes reviewing burdensome. Editing requires equipment which can be purchased by any teaching depart-

ment, but usually is available at all events in the department of clinical photography. Editing equipment is cheap and simple: a viewer, rewinds and a splicer comprise the entire outfit. About \$125 will purchase the best available semiprofessional equipment. Editing, as a fine art difficult to master, is slow and often arduous work. Practical, workman-like editing can be done by anyone. The crudities of amateur cutting apparently are not offensive to highly motivated and hard-pressed medical students concentrating on survival by learning.

The instructor is the best sound track for the newly edited films provided he knows enough *about* the subject matter and knows *how* to supply the verbal commentary. Sound tracks, when they exist, can be used or omitted by the simple expedient of flipping or not flipping a switch. When they are not used, or are partially used, the instructor can speak along with the screen image. Silent films already are an invitation to a carefully prepared narrative by the instructor.

Most of the new self-edited films emphatically require personalized narration. The new magnetic sound stripe (Magna-Stripe, Reeves Soundcraft Corp., 10 E. 52nd St., New York 22; Soundstripe, Bell & Howell Co., 7100 McCormick Rd., Chicago 45), which can now be added to all 16 mm. film stock, allows every instructor, for better or worse, to convert purchased films into his own, highly individualized presentations. Every medical teacher can become, overnight, an amateur producer of sound motion pictures, although there are great dangers in the process.

The most important fact to remember in the preparation and delivery of a narration is to bind tightly what is seen with what is said. *What is not seen is not well heard* and infrequently remembered. In film editing one rule always must be followed: pictures are the dominant factor in films; words are subordinate.

Ethical considerations surrounding a procedure of alteration and abstraction of films appear to be somewhat the same as those which generally apply to printed literature. First, credit for work done always should be given, by title if feasible, otherwise by word. The atmosphere of intellectual integrity which pervades the medical school will be the proper guide for the application of this borrowed visual material, particularly where it is used out of the context of its original preparation and with interpretations other than those of the author.

Films are altered and used in a range of ways. At Iowa some are used in toto, and the number of these is increasing as production standards improve. Others are slightly altered to delete a few objectionable or obsolete scenes. Some are considerably shortened, perhaps from three to two reels. For example, the excellent British film, "Scabies 1946," was shortened markedly without impairing its fundamental biological and clinical sections.

Other films yield only a few precious minutes of memorable footage. For example, Knisely's beautiful cinemicrography of blood sludging in cases of "Knowlesi Malaria in Monkeys" is an unforgettable demonstration of what probably occurs in malignant human falciparum malaria infections. Other examples of Iowa usage suggest the wide range of possible utilization. Portions of Lewis's "Tumor Cells and Macrophages in Tissue Cultures" time-lapse film are effectively used to present cellular defense mechanisms. Fragments of Lederle's film on the action of ciliated epithelium are very valuable. Leptospirae are beautifully seen in the bits from Rosebury's long film, "A Lecture on Spirochetes."

It often has been desirable to edit one film segment into another of different origin. In effect, this converts purchased films into stock footage for the creation of new amalgams,

produced by and for the personal instructional needs of a teacher.

There have been short films, "slides in motion," made in the past. Certain of these two to five-minute films from the Communicable Disease Center of the Public Health Service, and from the cameras of the university staff, have fitted the department's use patterns. Such shorts can be edited readily into composites or can be used alone. Brief "study films," made by the Communicable Disease Center from edited film wastage of longer productions, also have proved valuable.

Finally, it must be pointed out that all films can be re-edited year after year if this seems desirable to account for changes in scientific knowledge or differences in teaching approach.

At Iowa, classroom utilization of films has been vastly improved by methodical training of all staff members in the use and repair of departmental equipment. Every instructor is taught to recognize the common mechanical failures of the equipment. The department buys the best available, even where prices may be higher. Owning one's own equipment assures good usage and maintenance, as well as insuring availability. Beaded screens are considered essential in all classrooms to assure optimum projection of color films.

In summary, films are plastic stuff, provided one knows how to alter and use them. They can be fashioned into individual teaching instruments by the simple device of buying prints and editing them. Narration can be altered in several ways.

Both editing and narration require work, inexpensive equipment and a growing skill. But more than these, they require the conviction that incorporation of this film material into classroom teaching is worth the study, time and effort. The reward at Iowa has been the demonstrably improved teaching of preventive medicine.—D.S.R.

Staff Appointment

Utilization and distribution of audiovisual aids will be the primary responsibility of JOHN EDWIN FOSTER, Ed.D., who joined the MAVI staff in April.

For the past year Mr. Foster has been associate professor of adult education at the University of Manitoba. Previously, he has been an instructor at Indiana University, where he received his Doctor of Education degree, and a field representative for the National Film Board of Canada. During World War II, he spent three years overseas as a recreational officer for the Canadian army.

Mr. Foster also holds a M.S. in education from Indiana, a B.A. and a B.Ed. from the University of Saskatchewan.

Waiting Room Films

The possibility of using movies as a medium for education and entertainment in clinics and doctors' offices is being studied at the University of Chicago Clinics. Specially prepared color or black and white films, suitable for children and adults, are being used.

It is believed that waiting time in clinics and doctors' offices, which sometimes is unavoidable, may be used to good advantage by presentation of interesting and instructive movies. Many such films, covering a wide variety of subjects, may be found in existing libraries. A preliminary study to determine what types of films will be most acceptable to ready-made audiences is being made now.

Films are shown on a portable machine, which is about the size of an average suitcase, when closed, and which weighs only 35 pounds. A continuous loop film permits repeated showings of 16 mm. color film without rewinding or rethreading.

The equipment may be set up easily and quickly. The machine is placed in a convenient place, the 15-inch by 11-inch built-in projection screen



PATIENTS waiting in a clinic at the University of Chicago watch instructive and interesting films. Under discussion is the possibility of using educational movies in all clinic waiting rooms.

is opened out, the switch is turned on and the sound movie started. A 300-watt projection lamp makes brilliant illumination possible, even in a lighted room.

A machine with somewhat greater capacity has been designed and could be made available if there were sufficient demand.

Final Movie Bulletin

After semi-annual issuance for the past two years, the Institute has mailed the fourth and final bulletin of "Medical Teaching Motion Pictures Now in Production." Although this clearing house of information has provided a useful service to many teachers and producers, cumulative experience has shown that the time is not yet ripe for the effective collection and distribution of this kind of data, however useful it has been to a limited group.

Observations of the applications of the bulletins within the complete spectrum of film information indicates that the field of medical films is still so unstable that the shortcomings of this kind of information outweigh its

values. In addition, the extensive coverage of the medical film field by Library of Congress reference cards, available soon, should provide a fairly prompt reporting of new releases. This will fill the principal need for accurate and specific information.

In the interim before the free flow of Library of Congress cards, the Medical Audio-Visual Institute has sent out a brief bulletin on a number of medical motion pictures recently released and available for review and study. Issuance of this bulletin will assist those instructors who may wish to incorporate these new films into their 1952-53 teaching programs.

Summaries of Film Reviews

These brief notes on some medical motion pictures are intended to afford an offhand idea of the desirability and use of the film under review. They are drawn from the detailed evaluative reviews prepared by the Medical Audio-Visual Institute of the Association of American Medical Colleges.

Bronchoscopic Clinic

16 mm., color, silent, 1089 ft., 30 min.
(to be projected at sound speed).

Summaries of Film Reviews

Year of Production: 1948; **Country of Origin:** U.S.A.; **Authors and Producers:** Paul H. Holinger, M.D., Kenneth C. Johnston, M.D., and Frank J. Novak, III, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$330; Rental: \$15.

Summary: This film consists of bronchoscopic motion-picture views of 10 patients with bronchopulmonary diseases, amplified by titles summarizing the case histories and by x-rays and histological sections from biopsies. In addition the techniques of bronchoscopy and of endoscopic photography and cinematography are included, but both are presented in a sketchy manner, the latter also being extraneous to the subject. The endoscopic views furnish excellent study material in gross pathology but they, as well as the histological sections, require interpretation for nonspecialized audiences.

Audience: Medical students, interns, residents, general practitioners, internists, otolaryngologists, thoracic surgeons.

Diseases of the Ear, Nose and Throat

16 mm., color, silent, 705 ft., 29 min.

Year of Production: 1945-46; **Country of Origin:** U.S.A.; **Author and Producer:** Paul H. Holinger, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$250; Rental: \$15.

Summary: A methodical and carefully chosen selection of endoscopic motion-picture views through the nasal and the otic speculum, bronchoscope and esophagoscope, with identifying titles, showing normal structures and the most commonly encountered disease entities.

This excellent material should be valuable as a teaching aid, especially for audiences not yet familiar with the use of the endoscope in otorhinolaryngology.

Audience: Medical students, interns, residents, general practitioners, specialists in otolaryngology and chest diseases.

Diseases of the Esophagus

16 mm., color, silent, 661 ft., 27 min.

Year of Release: 1946; **Country of Origin:** U.S.A.; **Author and Producer:** Paul H. Holinger, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$200; Rental: \$15.

Summary: This film attempts to present the technique of esophagoscopy and correlates the clinical, x-ray, and endoscopic findings in some common diseases of the esophagus: strictures, diverticula, cardiospasm, foreign bodies and cancer. Inadequate as a demonstration of esophagoscopy technique, the film is chiefly of value as an atlas of impressive endoscopic motion-picture views. These lack orientational devices, however, and

need interpretation by the teacher if shown to audiences in training.

Audience: Medical students, interns, residents, general practitioners, internists, gastroenterologists, otolaryngologists.

Endoscopic Appearance of Diseases of the Trachea

16 mm., color, silent, 570 ft., 23 min.

Year of Release: 1951; **Country of Origin:** U.S.A.; **Author and Producer:** Paul H. Holinger, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$175; Rental: \$15.

Summary: The film consists of bronchoscopic and tracheoscopic motion-picture views of several congenital anomalies of the trachea, benign stenosis, inflammatory processes, and benign and malignant tumors. Comprising a fairly wide selection of common and very rare pathological conditions, the splendidly photographed views offer unique study material.

Audience: Medical students, interns, residents, general practitioners, internists, thoracic surgeons, otolaryngologists, gastroenterologists.

The Infant Larynx

16 mm., color, silent, 384 ft., 16 min.

Year of Release: 1946; **Country of Origin:** U.S.A.; **Author and Producer:** Paul H. Holinger, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$100; Rental: \$15.

Summary: This film shows direct laryngoscopic motion-picture views of the normal adult and infant larynxes and typical pathological conditions of the infant larynx, correlated in some cases with roentgenograms. While these views represent splendid basic materials for the study and review of the lesions, the lack of diagrammatic and directional devices necessitates interpretation by the teacher if the film is shown to audiences not experienced in laryngoscopy.

Audience: Medical students, interns, residents, general practitioners, otolaryngologists, pediatricians, internists, gastroenterologists.

Foreign Bodies in the Air and Food Passages

16 mm., color, silent, 742 ft., 31 min.

Year of Release: 1951; **Country of Origin:** U.S.A.; **Author and Producer:** Paul H. Holinger, M.D., Chicago.

Distribution: The Jacques Holinger Memorial Fund, 700 N. Michigan Ave., Chicago 11, Sale: \$175; Rental: \$15.

Summary: This film presents a wide selection of endoscopic motion-picture views of frequently encountered foreign

bodies in the esophagus, trachea and bronchi, illustrating also their removal and their valve action in the air passages. Limited exclusively to the endoscopic views, the film fails to bring out clearly some details of the instrumentarium used and of its application, but is most instructive and dramatic in showing the appearance of the foreign bodies *in situ*.

Audience: Medical students, interns, residents, general practitioners, gastroenterologists, otolaryngologists, pediatricians.

Congenital Malformations of the Heart
Reel 1: Development of the Normal Heart
16 mm., color, sound, 555 ft., 15 min.

Year of Production: 1951; **Country of Origin:** U.S.A.; **Sponsor:** Dr. and Mrs. Maimon Samuels, Seattle; **Authors:** Robert F. Rushmer, M.D. and Richard J. Blandau, M.D.; **Producer:** Department of Medical Illustration, University of Washington School of Medicine; **Direction and Animation:** Ralph E. Pearson; **Camera:** Anthony Canedo and Jack Newby; **Medical Illustration:** Jessie Phillips.
Distribution: Instructional Materials Center, University of Washington, Seattle 5, Wash., Sale: \$115; Rental: \$2.25.

Summary: The principal features of the development of the heart are clearly and skillfully demonstrated in this important teaching film. The introductory section, a cinemicrographic record of the developing chick heart, is well filmed but lacks some of the orientation required for a clear understanding of embryonic materials. The animated didactic portions of the film show the later development of the fetal heart and its parts, and the circulatory changes associated with birth. The film is well developed and organized, and executed with great proficiency. For all students of heart embryology the film will be effective and useful, both as an introduction and review of a complicated subject in human morphology.

Audience: Students of embryology, medical students, physicians interested in cardiac malformations.

Subcutaneous Blood Flow in the Bat

Reel 1: Vascular Patterns
Reel 2: Behavior of Blood and Vascular Components
Reel 3: Active Vasomotion

16 mm., black-and-white, sound, 384 ft., 11 min. (reel 1), 389 ft., 11 min. (reel 2), 377 ft., 10 min. (reel 3).

Year of Production: 1948; **Country of Origin:** U.S.A.; **Authors:** Richard L. Webb, Ph.D., and Paul A. Nicoll, Ph.D., departments of anatomy and physiology, Indiana University;

Narration: Paul A. Nicoll; **Camera** (in part): Walter Barnes.

Producer and Distributor: Indiana University Audio-Visual Center, 1804 Tenth Ave., Bloomington, Sale: \$100, single reels \$40; Loan.

Summary: This important teaching film incorporates splendid and revealing research footage of the anatomical relationships of the blood vessels, many phenomena of vessels and blood constituents, and vasomotion of the several types observed in the transparent vessels of the bat wing. Although the film's impact could have been greatly heightened by improved organization of its content and by better presentational skills, the film is outstandingly useful and dramatic in its visualization of vascular and blood physiology. The three reels are interrelated but can be independently used.

Audience: College students of biology, students of physiology (including medical students).

Fears of Children

(The Mental Health Film Board Series—Emotions of Every-Day Living, No. 3)

16 mm., black-and-white, sound, 1,020 ft., 28 min.

Year of Production: 1951; **Country of Origin:** U.S.A.; **Sponsor:** Oklahoma State Department of Health; **Psychiatric Consultants:** A. A. Hellams, M.D., and Milton Senn, M.D.; **Educational Consultant:** Nina Ridenour; **Producer:** Julian Bryan, International Film Foundation; **Script and Direction:** Francis Thompson; **Camera:** Peter Glushanok.
Distribution: International Film Bureau, Inc., 6 N. Michigan Ave., Chicago, Sale: \$115. Available on loan or for rent from state or local mental health authorities, mental health societies, public libraries, and educational film libraries.

Summary: This psychologically rich film demonstrates that parents must take into account the child's developmental needs in order to help him develop sound emotional health. It presents the experiences of one little boy caught between an overprotective mother and a domineering father. The parents' gradual acceptance of the boy as an individual demonstrates that well-motivated adults can follow factual advice on child rearing, even though such advice may conflict with their accepted pattern of doing things based on their own emotional constellation. A psychiatrically oriented discussion leader should be present to point out depth aspects of the film which will escape less sophisticated lay audiences.

Audience: Parents and child educators; medical students; pediatricians; nurses; students of psychology; patients in analytic group therapy.

Book Reviews

Preventive Medicine and Public Health

Wilson G. Smillie, M.D. The Macmillan Company, New York, 1952. 43 illustrations. 603 pp. including index. \$7.50.

This is the second and considerably larger edition of this well known and much used textbook for medical students. It was published first in 1946.

As in the first edition, the author gives little space to environmental sanitation, sharply distinguishes between preventive medicine and public health, and extolls the wisdom of the Boston bookseller, Lemuel Shattuck, whose "Report of a General Plan for the Promotion of Public and Personal Health," published in 1850, "has become a foundation stone for public health and preventive medicine in America."

Particularly noteworthy additions are: enlargement of the section on child health by the addition of material on the care of the premature infant; a chapter on accident prevention; a chapter on the conservation of vision; a chapter on diseases of the liver. Extensive revisions have been made in the chapters on vital statistics, nutrition and school health.

The six sections of the book are: Introduction, Population Trends, Vital Statistics, Environmental Sanitation, Communicable Disease Control, Child Hygiene, Adult Health Protection and Promotion, Public Health Administration.

This second edition has the same broad approach as the first, but it has been thoroughly revised to take into consideration the changes brought about by the development of antibiotics and effective insecticides, the increasing proportion of persons over 50, and the increasing emphasis on rehabilitation, medical care plans and community planning for health protection. It should prove a very useful text for the course in prevention medicine and public health in medical colleges, and a useful reference book for physicians in practice.

A Course in Practical Therapeutics

Martin Emil Rehfuess, M.D., F.A.C.P., professor of clinical medicine, and **Sutherland M. Prevost**, lecturer in therapeutics, Jefferson Medical College; **Allison Howe Price, A.B.**,

M.D., associate professor of medicine, Jefferson Medical College; and 17 contributors. The Williams and Wilkins Company, Baltimore, 1951. Profusely illustrated. 938 pp. including index. \$15.

This very large and somewhat diffuse book confines within its covers a mass of practical information, not readily available elsewhere, concerning the care of the sick person. Representing the best of the material which had been collected in its first edition by the late Dr. F. Kenneth Albrecht, this has been extended and revised.

Especially recommended is the section by Dr. Rehfuess on "General Therapeutic Principles," which contains much of the accumulated wisdom of that excellent clinician, set down in a very practical manner. Stressed is the care of the "whole patient" and not solely the chemotherapeutic or definitive aspects of treatment. Such homely but valuable procedures as the details of making and applying poultices and plasters are described in adequate detail. General nursing problems of interest to the physician, methods of arranging diet, dietary indications in various diseases, and an excellent section on the art and science of prescription writing are included. Every medical student would find himself the richer clinician for having read this section.

The section on symptomatic therapy is written basically in the form of an outline and is moderately complete in content. Its therapeutic sections suffer from the extensiveness of the lists of medicants. Two-thirds of the book is concerned with treatment for specific disorders. This, too, is in outline form and is comprehensive in scope. A feature of the text is the use of illustrations plus small, box outlines on the same page containing the essentials of diagnosis and treatment of various diseases. This short-form type of outline has its place for ready reference although this reviewer has never seen such poor medical illustrations. They are wholly lacking in taste and partially in scientific accuracy.

All in all, this book can be recommended to the medical student as a good compendium of a mass of practical information, put together in easily readable form. Certain sections—especially the section on "General Therapeutic Principles"—should be read by every medical student.

**Pharmacopoea Internationalis
(Ph. I.) Vol. I**

International pharmacopoeia, 1st ed. Vol. 1. *Bulletin of the World Health Organization*, Supplement 2, published by the World Health Organization, Palais des Nations, Geneva 1951. Available at Columbia University Press, International Documents Service, 2960 Broadway, New York 27. 406 pp. including appendices and index. \$5.

The appearance of Volume I of the first international pharmacopoeia finally supplies the instrument that has long been needed by physicians and pharmacists for the establishment of uniformity of standards and nomenclature for drugs used in various countries. In meeting the specific needs of the medical and pharmaceutical practices of their own countries, the various national pharmacopoeias exhibit important differences in standards, strength and names of drugs. Such differences, as the preface of this pharmacopoeia points out, cause confusion and misunderstanding, hinder the spread of medical and pharmaceutical knowledge and may lead to the retention of low standards in manufacture. The maintenance of common high standards, through the medium of an international pharmacopoeia, should promote economy of production and commerce between nations and contribute significantly to the health of all peoples.

Future volumes of this work are to be issued as international agreements are reached as to the standards and names of many important drugs for which monographs are not included in Volume I. Notable among these agents not yet included are the antibiotics, insulin and thyroid preparations, mercurial diuretics and liver preparation.

A French edition of Volume I of *Pharmacopoea Internationalis* appeared simultaneously with the English, and a Spanish edition will be available soon.

A Synopsis of Neurology—1st Edition

W. F. Tinsington Tatlow, M.D., M.R.C.P. (Lond.) medical registrar, Maida Vale Hospital for Nervous Diseases, London. J. Amer. Arch. M.B., Ch.B., D.P.M. (Brist. and Lond.) Senior registrar in psychiatry, Aberdeen General and Mental Hospitals, and J. A. R. Bickford, M.R.C.S., L.R.C.P., D.P.M. (Brist.), senior registrar in psychiatry, Maryfield Hospital, Dundee, and Dundee Mental Hospital, Gowrie House. Williams and Wilkins, Baltimore, 1952. 84 illustrations. 513 pp. including index. \$6.50.

Within one small volume the authors have managed to compress an enormous amount of factual material in a remarkably orderly and successful way.

The first section, which comprises almost half the book, is devoted to neuroanatomy, but also contains a great deal of pertinent physiological information. A number of well chosen and well executed illustrations and diagrams contribute greatly to the text of this part of the book. The succeeding sections deal with clinical disorders of the nervous system.

The presentation, in extended outline form, is clear, uniform and systematic throughout. Above all it is accurate—the first consideration in a work which should serve primarily as a source of rapid factual reference for students. For this purpose the book can be recommended highly. Indeed, it is so convenient and inclusive a digest that many students will be tempted to use it as a textbook. This would be unfortunate as the book suffers from a fault inevitable in all synopses: a lack of perspective.

**The Child in Health and Disease—
2nd Edition**

A Textbook for Students and Practitioners of Medicine. Clifford G. Girdlee, M.D., and R. Cannon Eley, M.D., The Williams and Wilkins Company, Baltimore, 1952. 1255 pp. \$15.

A certain unevenness in quality characterizes the new edition of this textbook. This seems inevitable in view of the fact that 89 authors have contributed to it.

The problem of balance between the highly specialized presentations has not been solved in a happy fashion. Some chapters are full-grown monographs with extensive bibliographies. Others are handled in a somewhat sketchy manner and show lack of familiarity with the field, particularly the work done in the last few years. For example, very little attention is given to influenza. The reader is told there are vaccines, but he is given no indication of how useful they may be.

Valuable additions are special chapters on cardiovascular surgery, pancreatic fibrosis, fetal erythroblastosis, summer camps and adoption. There also is a useful chapter on child pathology that distinguishes this text. More emphasis, however, should have been given to the all-important subjects of congenital malformations and childhood neoplasms.

Materials are organized in 19 sections, but the basis for this organization is not always clear. For example, the distinction between "communicable diseases" such as scarlet fever and measles, and "acute infections" such as streptococcal infections and the common cold remains a mystery.

Psychiatry and Medical Education

Report of the 1951 Conference of Psychiatric Education held at Cornell University, Ithaca, N. Y., June 21-27, 1951. Organized and conducted by the American Psychiatric Association and the Association of American Medical Colleges. Editorial board: John C. Whitehorn, M.D.; Carlyle Jacobsen, Ph.D.; Maurice Levine, M.D.; Vernon W. Lippard, M.D. American Psychiatric Association, Washington, 1952. 164 pp. with index. \$1.

A blueprint for modern medical education and medical community service, this report has been prepared by a distinguished editorial board appointed by the Conference on Psychiatric Education. The conference had no prepared papers but consisted of full and free discussion by a selected representative group of deans of medical schools, psychiatrists, sociologists, social workers and others concerned with medical education and community needs.

The group was in general agreement that the physician has key responsibility for meeting the emotional needs of his patients, and that his training in many cases is lacking insofar as it fails to provide him with the means for dealing with their emotional problems.

Cooperation between professional workers is emphasized. Many individual and community needs, and many problems of the social system are the joint responsibility of clergymen and physicians, educators and physicians, or law enforcement agents and physicians. For this reason, the doctor of tomorrow must learn to work cooperatively with other professional people.

The book contains useful chapters on the medical student, his selection, the medical school and its deficiencies and potentialities, methods of teaching psychiatry in the undergraduate medical period and the medical schools, and the scientific foundations of psychiatry.

An appendix lists 32 documents prepared in advance of the conference by groups of specialists in the various topics considered. Mimeographed copies of most of these documents are available at a nominal cost from the American Psychiatric Association, Washington, D. C.

Psychosurgical Problems

F. A. Mettler, editor. The Blakiston Company, Philadelphia, 1952. 357 pp. \$7.

This volume is the second major contribution of the Columbia-Greystone Associates. It describes the group's further researches in psychosurgery and contains follow-up studies of patients previously reported in "Selective Partial Ablation of the Frontal Cortex."

Dr. Mettler has collaborated with 25

new workers and 10 of the 42 contributors to the first study. The authors raise, and attempt to answer, problems concerning the reasons patients improve following psychosurgery and the way to manipulate these causes for improvement so that surgery may be reduced to a minimum. These questions arose because topectomy often results in destruction of brain tissue beyond the region removed.

This report is based on studies of 33 patients who had the following operations: ligation of the anterior cerebral veins—12; thalamotomy—2; thermocoagulation—2; transorbital lobotomy—9; topectomy—1; intracranial lobotomy—1; controls—6.

It is regrettable that the psychiatric report is confined to a relatively brief chapter of 28 pages and that the concluding chapter was not co-authored by a psychiatrist. The psychodynamic studies by Cattell are not included in this volume. The conclusion that "no permanent loss of intelligence resulting from psychosurgery of these varieties has been confirmed" leaves many important questions unanswered. Insofar as this work represents an attempt at an interdisciplinary approach to problems of psychoses, it is recommended to all who have occasion to deal with psychotic patients.

Clark's Applied Pharmacology—8th Edition

Andrew Wilson, M.D., Ph.D., F.R.F.P.S., reader in applied pharmacology, University of London at University College, London, and University College Hospital Medical School; H. O. Schild, M.D., Ph.D., D.Sc., reader in pharmacology, University of London at University College, London. With the editorial assistance of Arthur Osol, Ph.D., B.Sc., M.Sc., Ph.D., professor and director of the chemistry department, Philadelphia College of Pharmacy and Science. The Blakiston Company, Philadelphia 5, 1952. 120 illustrations; 47 tables. 691 pp. including index. \$7.

The textbook presents the subject of pharmacology in a well-organized manner and is especially outstanding in its concise presentation of the physiological and biochemical basis for the actions of drugs. The approach used should give students a better understanding of the uses and actions of drugs than can be obtained from those textbooks which describe drugs individually without adequate correlation of the subject matter.

While this book constitutes a valuable supplemental reference, differences in the nomenclature for drugs in Great Britain and the United States as well as omission of some drugs used frequently in this country would seem to limit its adaptability as the principal text for a pharmacology course.

**The Collected Papers of Adolf Meyer
Volume IV, Mental Hygiene**

General editor, Eunice F. Winters. An introduction by Alexander H. Leighton, M.D., professor of sociology, Cornell University. The Johns Hopkins Press, Baltimore, 1952. 337 pp. with index. Set of four volumes, \$30.

This is the fourth in the collected series of articles and lectures written by Dr. Adolf Meyer during his busy lifetime, and it correlates his ideas on the interrelationship of the individual's mental and physical health with his social and cultural life. Dr. Meyer recognized early that the human organism cannot be considered apart from its setting in the world.

Collected in this volume are Dr. Meyer's remarks on: Ideals for Work in Mental Hospitals, Psychiatry and the Law, Psychiatry and the Community, Aftercare and Social Work, the Mental Hygiene Movement, Eugenics, Psychiatry and the Child and Psychiatry and the Problems of Maturity.

**World Population Problems and
Birth Control**

Annals of the New York Academy of Sciences, Vol. 54, Art. 5. 1952. Edited by Roy Waldo Miner. 250 pp. Illustrated. \$3.

Discussed in this series of papers are the general problems of keeping the population of the world at an economically practical level. High birth rates in several countries and the efforts made by the population to reduce them are considered. Clinical papers present indications for contraception, discuss simplified birth control techniques and family planning.

The Will to Live

Arnold A. Hutschnecker, M.D. Thomas Y. Crowell Company, New York, 1951. 278 pp. including index. \$3.50.

For popular consumption Dr. Hutschnecker has written another self-help type of book on the hardly new theory that there are emotional paths to many physical illnesses. The book is written in a highly emotional style, and Dr. Hutschnecker tends to go overboard in finding mental causes for nearly all physical illnesses.

The book is filled with brief case histories handled in a fictionized manner. Little new for the medical student or practitioner, but will take its place among the large number of similar books produced in recent years for the layman on the subject of psychosomatic illness.

**A Practical Handbook of Midwifery
and Gynaecology**

4th Edition. W. F. T. Haultain, examiner in midwifery and gynaecology, triple qualification and fellowship examination, Royal College of Surgeons, Edinburgh; Clifford Kennedy, assistant obstetrician and gynaecologist, Royal Infirmary, Edinburgh; J. L. Henderson, professor of child health, St. Andrews University. E. & S. Livingstone Ltd., Edinburgh and London, 1952. 47 figures. 412 pp. including index. \$6.

This book, in its fourth edition, should prove as practical as its name implies. It is written in usable outline form, making sequence logical and reference easy. The emphasis is on obstetrics, with only related gynecological problems discussed. The volume is written in simple, understandable language and should be valuable in the library of the student and practicing physician.

The Fight Against Tuberculosis

An Autobiography by Francis Marion Pottenger, M.D., medical director of Pottenger Sanatorium, Monrovia, Calif.; professor emeritus of medicine, University of Southern California. Henry Schuman, Inc., New York, 1952. 276 pp. \$4.

In a simple and interesting manner, Dr. Pottenger has written the history of the fight against tuberculosis in his lifetime. He views the struggle from the vantage point of his 80 years, during which many of the major changes in diagnosis and treatment have occurred. When Dr. Pottenger entered medical practice in 1894, tuberculosis deaths averaged 200 per 100,000 cases. In 1951, the average was 22.2 deaths per 100,000. Though no literary man, much of the enthusiasm Dr. Pottenger brought to the battle has been reflected in his autobiography. Fascinating reading for layman and professional alike.

Clinical Ballistocardiography

Herbert R. Brown Jr., M.D., Vincent de Lalla Jr., M.D.; Marvin A. Epstein, M.D.; Marvin J. Hoffman, M.D. The MacMillan Company, New York, 1952. Illustrated with drawings and charts. 188 pp. including index. \$5.50.

A complete monograph on the ballistocardiograph, beginning with a definition and including chapters on its history, types of apparatus used, normal and abnormal findings.

The potential of the ballistocardiograph in the identification of circulatory and cardiac disorder, with clinical reports, is explored thoroughly.

Apparatus for the ballistocardiograph now is generally available and those practitioners who wish to use it will find this volume a helpful handbook. A valuable bibliography is appended.

Book Reviews

Essentials in Diseases of the Chest for Students and Practitioners

Philip Ellman, M.D., F.R.C.P., consultant physician in diseases of the chest to the North-East Metropolitan Regional Hospital Board at East Ham Chest Clinic, Harts Sanatorium and Plaistow Hospital Chest Unit, London; consultant physician at St. Stephen's Hospital (rheumatism unit), London, and Dorking General and Leatherhead hospitals; editor, *British Journal of Tuberculosis and Diseases of the Chest*. Illustrated with photographs and diagrams. Geoffrey Cumberlege, Oxford University Press, London, New York, Toronto, 1952. 400 pp. with index. \$6.50.

Dr. Ellman assumes that the readers of this volume have a basic clinical knowledge of the chest. Valuable as a handbook on disorders of the chest, the book includes chapters on the common cold, asthma, bronchitis, emphysema, bronchiectasis and the pneumonias. Most of the text, however, is devoted to a discussion of pulmonary tuberculosis and the various methods of treatment.

Special sections relate to chest diseases and age, with detailed discussions on the particular manner in which disease may be manifested in childhood and old age.

Though brief, this volume is comprehensive in nature and is amply illustrated with diagrams, charts and pictures.

Principles of Refraction

Sylvester Judd Beach, M.D., F.A.C.S., consultant, Maine Eye and Ear Infirmary; chief ophthalmologist, Portland City Hospital. The C. V. Mosby Company, St. Louis, 1952. Illustrated. 158 pp. with index. \$4.

In this book the term refraction is taken to mean the all-inclusive examination of eyes for lenses. There is no attempt at clinical discussion of the causes or prevention of eye defects.

The text contains a thorough discussion of practical optics for the student or physician. It is written clearly and simple examples are used to illustrate points. Included are chapters on: Refractive Errors, Medical Records Retinoscopy, the Routine of Subjective Refraction, the Cycloplegic Refraction, Treatment of Amblyopia and Ocular Neuroses.

Bertrand Russell's Dictionary of Mind, Matter and Morals

Edited, with an introduction by **Lester E. Denonn**. Philosophical Library, New York, 1952. 290 pp. with index. \$6.

Here is a conglomeration of Bertrand Russell, fine for reading at random. It gives the reader the Russell tone and flavor, but in no way precludes the larger reading of his works. The method of selecting material seems haphazard.

Statistics for Medical and Other Biological Students

I. Bernstein, B.Sc., M.R.C.S., L.R.C.P., senior lecturer in physiology, London Hospital Medical College, and **M. Weatherall, M.A., D.M., B.Sc.**, senior lecturer in pharmacology, London Hospital Medical College. The Williams and Wilkins Company, Baltimore, 1952. 180 pp. including index. \$4.

The authors present this compact treatment of statistics to enable medical students to understand and interpret statistical procedures. The book assumes only a knowledge of arithmetic and simple algebra. It does not contain conventional student exercises but presents problems of a biological nature concerning central tendency, variability, sampling, correlation, chance differences and analyses of variance. These are worked out completely in the explication of the chapters. The student may use these presentations for references in solving his own problems.

Additional valuable chapters discuss scientific method, experimental design and interpretation of observations.

Hemifacial Spasm

A Clinical and Pathophysiological Study. Robert Wartenberg, M.D. Oxford University Press, New York, 1952. Illustrated with clinical photographs. 86 pp. with index \$4.

Dr. Wartenberg has written a succinct and valuable monograph. Its 86 pages are packed with accurate information and a clinical approach is felt through the use of carefully selected photographs. The author makes clear the distinction between the hemifacial spasm and other similar-appearing afflictions such as facial tic. A comprehensive bibliography is appended.

Books Received

A Textbook of Pharmacology

Principles and Application of Pharmacology to the Practice of Medicine. William T. Salter, M.D., professor of pharmacology, Yale University School of Medicine. W. B. Saunders Company, Philadelphia and London, 1952. Illustrated with charts and graphs. 1240 pp. \$15.

Bone Tumors

Louis Lichtenstein, M.D., senior pathologist, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles; formerly associate pathologist, Hospital for Joint Diseases, New York; consultant in bone tumors, Tumor Registry of the California Medical Association Cancer Commission; sometime lecturer in bone pathology, medical extension, University of California at Los Angeles. The C. V. Mosby Company, St. Louis, 1952. 135 illustrations. 315 pp. with index. \$10.50.

**Survey of Clinical Pediatrics—
1st Edition**

Lawrence B. Slobody, M.D., professor of pediatrics, New York Medical College; director of pediatrics, Flower and Fifth Avenue Hospitals, Metropolitan Hospital; medical director, Children's Center, New York City. McGraw-Hill Book Company, Inc., New York, Toronto, London, 1952. 471 pp. with index. \$7.50.

**Textbook of Surgical Treatment—
4th Edition**

Including Operative Surgery. Edited by **C. F. Illingworth, C.B.E., M.D., Ch. M., F.R.C.S.E., F.R.F.P.S.** (Glas.), regius professor of surgery, University of Glasgow. Compiled by 22 contributors. The Williams and Wilkins Company, Baltimore, 1952. Illustrated with photographs (some in color) and drawings. 744 pp. including index, \$9.

Surgical Gynecology

J. P. Greenhill, M.D., professor of gynecology, Cook County Graduate School of Medicine; attending gynecologist, Cook County Hospital; attending obstetrician and gynecologist, Michael Reese Hospital. The Year Book Publishers, Inc., Chicago, 1952. Illustrated with sketches by Angela Bartenbach. 350 pp. including index. \$8.50.

Annual Review of Physiology—Volume 14

Editor, **Victor E. Hall**, University of California School of Medicine, Los Angeles. Associate Editors, **Jefferson M. Crisman** and **Arthur C. Giese**, both of Stanford University. Published by Annual Reviews, Inc. and the American Physiological Society, 1952. 569 pp. including index. \$8.

Surgery and the Endocrine System

James D. Hardy, M.D., F.A.C.S., assistant professor of surgery, University of Tennessee Medical College. W. B. Saunders Company, Philadelphia & London, 1952. Illustrated with sketches and charts. 153 pages including index. \$5.

**The Unipolar Electrocardiogram,
a Clinical Interpretation**

Joseph M. Barker, M.D., F.A.C.P., cardiologist, Yater Clinic; associate professor of clinical medicine and special lecturer in physiology, Georgetown University School of Medicine; director of the heart station and visiting physician, Georgetown University Hospital; chief of cardiology, Providence Hospital; visiting physician, Gallinger Municipal Hospital; consulting cardiologist, Arlington (Va.) Hospital. Illustrated with charts and graphs. Appleton-Century-Crofts, Inc., New York, 1952. 655 pp. including index. \$12.50.

Spatial Vectrocardiography

Arthur Grisham, M.D., adjunct physician for cardiology, Mt. Sinai Hospital, New York, and **Leonard Scherlis, M.D.**, research assistant in cardiology, Mt. Sinai Hospital, New York. W. B. Saunders Company, Philadelphia & London, 1952. Illustrated. 217 pp. including index. \$6.

The Scalp in Health and Disease

Howard T. Behrman, A.B., M.D., assistant clinical professor of dermatology, New York University Post-Graduate Medical School; adjunct dermatologist, Mount Sinai Hospital; attending dermatologist, Hillside Psychiatric Institute; formerly associate dermatologist, Bellevue Hospital, and assistant attending dermatologist, University Hospital; fellow in dermatology, New York Academy of Medicine; member, Committee on Cosmetics, American Medical Association; Society of Cosmetic Chemists; Society for Investigative Dermatology; fellow, American Academy of Dermatology; diplomate, American Board of Dermatology. The C. V. Mosby Company, St. Louis, 1952. 312 illustrations. 566 pp. including index. \$12.75.

**Biochemistry for Medical
Students—5th Edition**

William Veale Thrope, M.Z. (Cantab.), Ph.D. (Lond.), reader in chemical physiology, University of Birmingham. J. B. Lippincott Company, Philadelphia, London, Montreal, 1952. 41 illustrations. 328 pp. including index. \$8.

Advances in Pediatrics—Volume V

Editor: **S. Z. Levine**, Cornell University Medical College, New York. Associate editors: **Allan M. Butler**, Harvard Medical School, Boston; **Margaret Dann**, Cornell University Medical College, New York; **L. Emmett Holt Jr.**, New York University College of Medicine, New York; **A. Ashley Weech**, University of Cincinnati College of Medicine, Cincinnati. The Year Book Publishers, Inc., 1952. Illustrated with graphs and photographs. 273 pp. including index. \$7.

Current Therapy—1952

Latest Approved Methods of Treatment for the Practicing Physician. Editor, **Howard F. Conn, M.D.** 12 consulting editors. W. B. Saunders Company, Philadelphia and London, 1952. 849 pp. including index. \$11.

A Textbook of Histology—6th Edition

Alexander A. Maximow, late professor of anatomy, University of Chicago, and **William Bloom**, professor of Anatomy, University of Chicago. 986 illustrations: 257 in color, on 580 figures. W. B. Saunders Company, Philadelphia, 1952. 616 pp. including index, \$10.

Pamphlets Received

Politics is What YOU Make It. Joseph E. McLean, associate professor of politics in the Woodrow Wilson School of Public and International Affairs at Princeton University, National Planning Committee of the American Veterans Committee. Published 1952 by the Public Affairs Committee, 22 E. 38th St., New York 16. 32 pp. illustrated with drawings. \$25 a copy. Quantity rates.

Diseases of the Heart and Blood Vessels, Facts and Figures. Published April, 1952, by the American Heart Association, 1775 Broadway, New York 19, N. Y., in cooperation with the National Heart Institute. 16 pp. with graphs and charts.

After careful consideration, the Journal Committee has decided that printing the book reviews unsigned will promote maximum objectivity. Reviewers will continue to be carefully selected, of course, for their special qualifications for reviewing particular books.

General News

Executive Council Actions at June Meeting

Plans for the Association's 1953 Teaching Institute on Biochemistry, Physiology and Pharmacology in the Training of a Physician were discussed by members of the Executive Council at their June 13-15 meeting in New York City. The institute will be conducted October 19-24, 1953, preceding the 64th Annual Meeting which has been set for October 25-28.

In connection with the proposed institute, Dr. R. W. Gerard, president of the American Physiological Society, and Dr. Orr E. Reynolds, executive director of the Survey of Physiological Science, reported on progress of the plans for the Survey of Physiological Science.

The Council approved the setting up of a seven-man committee to correlate planning of the institute with the survey. Members of the new committee are: Dr. Ward Darley, chairman; Dr. C. N. H. Long; Dr. Stanley Dorst; Dr. Gerard, and three members to be chosen by the American Physiological Society—one representing physiology, one biochemistry and one pharmacology.

In the course of the meeting, the Council approved:

—The Association budget for the fiscal year beginning September 1, 1952, with the proviso that the expense budget of the MAVI be reduced proportionately in the event all or part of its needed grant of \$18,820 is not found. Total budget figures are: \$66,275 for the secretary's office; \$100,000 for the Committee on Student Personnel Practices; \$57,535 for the Journal of MEDICAL EDUCATION; \$50,000 for the MAVI.

—The recommendation of the Journal Committee to convert the Journal of MEDICAL EDUCATION to a 12-issue publication beginning in January 1953.

—Subdivision of the Committee on Continuation Education into a Section on Graduate Education and a Section on Postgraduate Education. Members of the graduate section are Dr. Aims C. McGuinness, Dr. K. B. Corbin, Dr. Roscoe Pullen, Dr. Thomas M. Peery, Dr. C. J. Smyth. Members of the postgraduate section are Dr. George N. Aagaard, Dr. Robert Boggs, Dr. Michael J. Bent, Dr. Samuel Proger, Dr. Walter Wiggins.

—Transformation of the Committee on ROTC into a subcommittee of the Joint Committee on Medical Education in Time of National Emergency.

—Incorporation of the National Interassociation Committee on Internships.

Other business taken up by the Executive Council included:

1. Announcement by Executive Council Chairman Joseph C. Hinsey of two grants, each of \$25,000, from the China Medical Board, for 1952-53. One grant is for general use by the Association, the other for MAVI.

2. Final arrangements for the program of the 63rd Annual Meeting, to be held November 10-12 at the Broadmoor Hotel, Colorado Springs, Colo.

3. Reports of recent inspectional visits to the University of Oklahoma School of Medicine, Marquette University School of Medicine, Southwestern Medical School of the University of Texas, and the University of Nebraska School of Medicine.

AMA Holds 101st Meeting

The 101st annual meeting of the American Medical Association, June 9-13, drew a crowd of approximately 30,000 to Chicago last month. Registration exceeded that of any previous AMA convention.

Dr. Louis H. Bauer, Hempstead, N. Y., was inaugurated as 1952-53

president of the AMA. Chosen as president-elect to take office at the 1953 session was Dr. Edward J. McCormick, Toledo, Ohio.

Three hundred scientific and technical exhibits were on display during the meeting. More than 1,200 leading physicians and scientists participated in the exhibits, presenting the results of the latest in research and modern technical methods.

Dr. Paul D. White, noted cardiologist of Boston, was awarded AMA's distinguished service award.

Governmental matters concerning medicine received attention at the meeting and various resolutions were adopted by the House of Delegates.

Included were: a resolution favoring an amendment to the federal constitution limiting the taxing power of the federal government; a resolution approving the conduct of the officers and the Board of Trustees regarding the President's Commission on Health Needs of the Nation. The delegates also adopted a recommendation to conclude AMA's educational campaign against socialized medicine at the end of the year.

John Dewey Dies

John Dewey, educator whose name is almost synonymous with progressive education, died May 28 at the age of 92. Leading educators throughout the nation publicly expressed their debt to Dewey, who published more than a thousand books, articles and speeches on the philosophy of education during his busy lifetime. Dr. Earl J. McGrath, United States Commissioner of Education, said: "John Dewey's life and teaching have more widely affected educational thought and practice in this country and throughout the world than has the work of any other man of his generation."

Foreign Students

A report from the office of John M. Stalnaker, director of studies of the

Association of American Medical Colleges, reveals that as of May 1, 1952, there were 454 foreign students attending U.S. medical schools. These non-residents were distributed over 57 different medical schools.

Foreign students in the medical schools are among the record number of foreign students in all fields now studying in the United States. A census completed last month puts the total of students here well over the 30,000 mark. Largest number of students come from Canada, China and West Germany.

AMA Census Reports for 1951

Hospitals were busier than ever last year according to the annual census of hospital service in the United States by the Council on Medical Education and Hospitals of the American Medical Association. The 6,637 hospitals surveyed by the council admitted 18,237,371 patients last year. Previous high was established in 1950 with 17,023,513 patients in 6,430 registered hospitals. Births in hospitals also reached a new high, with a total of 2,999,371 for last year, or one live baby every 10.7 seconds.

A report from the AMA also reveals that the number of physicians in the U.S. reached a peak in 1951, with a total of 211,680. This represents a net increase of 2,640 doctors during 1951. The report indicated the high quality of training in the approved medical schools of this country. Of 5,018 graduates who last year took written examinations for licenses, 97.1 per cent passed. In comparison, only 57.9 per cent of the graduates of other schools successfully passed state board examinations. Other schools included approved Canadian schools, extinct approved schools, foreign schools, unapproved schools and schools of osteopathy.

Report on Nation's Health Needs

The President's Commission on the Health Needs of the Nation reported

to the chief executive during the first week of June, informing him of the activities of the commission during the first six months of its existence and outlining plans for completion of the assignment.

The group has inquired into the health resources of the nation, holding a series of panel discussions which included experts in the fields of general practice, specialization, group practice, regional medical plans, veterans' medical care, promotion of health, rehabilitation, education of doctors, health of the aging, rural health, mental health, care of the chronically ill, medical research, industrial health and training of nurses.

The information thus acquired is to be published sometime this year in a volume entitled "The Health Resources of the American People."

According to Dr. Paul B. Magnuson, head of the commission, the efforts of the group for the next few months will be directed to gathering "grass roots" opinions about medical care at town hall-type meetings to be held throughout the country. Meetings have been scheduled for San Francisco, Philadelphia, Houston, Detroit and Chapel Hill, N.C. Meetings may be scheduled later for Minneapolis, Denver, St. Louis and Boston.

Dr. Magnuson expressed the belief that, at the conclusion of the study, the commission will be able to come up with a sound national health plan acceptable to the people and the doctors of America.

Preprofessional Education

The Southwest Conference on Pre-Professional Education was held at Galveston, Texas, May 15-17, under the sponsorship of the Texas Academy of Science, Alpha Epsilon Delta (national honorary premedical society) and the University of Texas. Attending were representatives from the medical schools. Among those at the meeting were Drs. F. H. Arestad, H. G. Weiskotten, Chauncey D. Leake and John M. Stalnaker, director of

studies for the Association of American Medical Colleges. Mr. Stalnaker addressed the group on "Preprofessional Education and Professional School Performance." Responsibilities and special problems of preprofessional schools were considered in a series of section meetings.

NEA Conference

The seventh annual national conference on higher education, sponsored by the National Education Association, met in Chicago, April 17-19, to discuss the purposes and the problems of colleges and universities. Sidney Hook, professor and chairman of the department of philosophy of New York University, introduced the controversial subject of academic freedom in a speech to the conference. Contending that academic freedom was "more than an academic matter," Mr. Hook stated that "the essential distinction must be preserved between heresy and conspiracy. Hostility to heresy of any kind is in the long run fatal to any kind of education which is something more than conditioning for conformity. . . ."

T. V. Smith, Maxwell professor of citizenship, Syracuse University, presented the case for "middle-sized" values for higher education, stating that a region somewhere between the purely idealistic and the completely practical was the proper region for higher education.

Council on Education

The 35th annual meeting of the American Council on Education was held in Chicago, May 2-3. Member organizations and institutions met to review the past year's activities and make plans for the future. The council was divided into five sections to consider: financial problems of liberal education at the college level; coordinating programs for international understanding; education and national manpower policies; developing effective college teachers; improving the administration of intercol-

legiate athletics; education and television. Presiding at the meeting was Council Chairman Everett N. Case, president of Colgate University.

Announce Fund Awards

Research in heart disease will be aided this year by awards totaling \$783,835 from the Life Insurance Medical Research Fund. Fifty grants amounting to \$641,735 went to medical schools and research institutions for their heart disease research programs. Thirty-seven fellowships were established for young doctors and students.

The fund is supported by 141 life insurance companies in the United States and Canada, which have contributed \$4,700,000 to research since the organization was established in 1945.

The National Science Foundation recently announced 624 graduate fellowships for the year 1952-53. Awards vary from \$1,400 to \$3,000 per year, with family subsistence obtainable where necessary. Of the awards, 158 are in the biological sciences, 140 in chemistry, 137 in physiology and 75 in engineering.

Veterans Enrollment Decreases

A report from the director of studies of the Association of American Medical Colleges indicates a gradual decrease in the number of veterans entering medical schools. Last November, medical schools were asked to indicate the number of veterans and other students enrolled in each class. Total results were:

	Veterans	Total
Freshmen	1851	7292
Sophomores	2997	6832
Juniors	3866	6493
Seniors	4169	6090

Fund-Raising Workshop

Fund raising will be the subject of a workshop held at Pennsylvania State College, July 21-August 9, under the direction of Bernard P. Tay-

lor, professional fund raising consultant. Designed for the fund director, the alumni secretary and other administrative officers, the workshop will be concerned with capital gift campaigns, bequests, insurance and annuity plans, and long-term development programs.

Rockefeller Fund Grants

Grants totaling \$2,001,098 for the first quarter of this year were announced recently by the Rockefeller Foundation. The bulk of the money is to be used for medical projects.

The largest grant went to the Karolinska Institute in Stockholm for an experimental surgical laboratory. The laboratory will serve as a training center for European surgeons interested in circulatory and respiratory ailments.

Yale University received \$100,000 for the development of a research program in the physical chemistry of proteins. The University of North Carolina received \$56,250 for research and for the development of a statewide health and medical care program. The foundation also contributes to a pilot study in North Carolina conducted by the American Hospital Association's Commission on Financing of Hospital Care.

Other foreign medical grants include substantial sums to the Research Institute of Biological Sciences of Uruguay, and the University of Wuerzburg, Germany.

School Administration Study

The Cooperative Program in Educational Administration met in May at Teachers College, Columbia University, to report on the results of two years of research and field work. The \$3 million program is backed by the Kellogg Foundation. Its purpose is to improve the training and service of school administrators. The report of the conference emphasized the necessity of a period of internship as part of the professional preparation of all students of administration.

College News

Baylor University College of Medicine

The Baylor Medical Foundation, an inter-denominational and civic endowment-establishing body, has instituted the WALTER H. and FRED A. MOURSUND Endowment Fund for the college, in their honor. Dr. Moursund has been dean since 1923. Alumni already have shown great interest in the fund as a means of honoring Dr. Moursund, the oldest dean in point of service in America today.

A settlement of the estate of the late Mrs. HELENE CROSBY SIMMONS will make available to the college oil properties worth in excess of \$1 million.

The Arabia Temple Crippled Children's Clinic in the Texas Medical Center has been dedicated and is now in operation. Plans for further expansion of the various units of the center include the College of Dentistry of the University of Texas; the \$1,250,000 library building of the Houston Academy of Medicine; the 200-bed Texas Children's Hospital; the M. D. Anderson Cancer Hospital; and the new 800-bed city-county hospital to be located immediately adjacent to the college. These additional facilities will be added to 1,800 hospital beds already in use.

University of Buffalo

The School of Medicine, in cooperation with the Eighth District Branch of the Medical Society of the State of New York and the Western New York State Heart Association, presented a postgraduate course in adult heart disease on May 20 and 21. Dr. IRVING S. WRIGHT, professor of clinical medicine at Cornell University Medical College and president-elect of the American Heart Association, was visiting lecturer. Emphasis was placed on case presentations and clinical ward work, with panel discus-

sions for individual consideration of problems.

University of California, S. F.

Thirty-three medical scientists from free nations all over the world are now taking postgraduate training at the University of California Medical Center. The foreign scholars are doctors, dentists or pharmacists representing 21 countries and are here under auspices of the Department of State. All the students possess graduate degrees and are taking advanced training in their own specialized fields.

Dr. HERBERT MCLEAN EVANS, professor of anatomy, has been announced as winner of the Passano Foundation award for 1952 in recognition of his work in perfecting methods of recognizing the anterior hypophyseal protein hormones. Established in 1943 by the Williams & Wilkins Company, medical publishers of Baltimore, the Passano Foundation is dedicated to the encouragement of medical research, especially clinical research.

Chicago Medical School

Dr. EGON W. FISCHMANN was honored at a testimonial dinner given by the faculty on June 11. After 21 years as professor and chairman of the department of obstetrics and gynecology, Dr. Fischmann is retiring from active teaching and administration.

President JOHN J. SHEININ has been appointed a member of the Committee on Emergency Medical Service of the Chicago Medical Society and chairman of the mayor's committee for inspection of experimental animal quarters in local medical schools and hospitals.

The following grants were recently announced: Dr. A. C. RITCHIE, research fellow in oncology, received

\$6,000 from the National Cancer Institute for studies of factors influencing cancer production in animals. Dr. PHILIPPE SHUBIK, assistant professor of surgery and coordinator of the cancer teaching program, and Dr. A. ROBERT GOLDFARB, associate in the department of biochemistry, have received a grant of \$2,500 from the Atomic Energy Commission for studies of cancer-producing effects of beta radiation. Dr. PAUL HURWITZ, assistant professor of ophthalmology, has been granted \$2,400 for the study of new drugs in the treatment of various allergic diseases of the eye by Ciba Pharmaceutical Products, Inc.

University of Chicago

Dean LOWELL T. COGGESHALL has been elected president of the Chicago Society of Internal Medicine for the 1952-53 term. Two other university doctors were also elected to the presidencies of Chicago medical associations: Dr. WILLIAM E. ADAMS, professor of surgery, presidency of the Chicago Surgical Society, and Dr. ARLINGTON C. KRAUSE, associate professor of ophthalmology, president of the Chicago Orthoptic Society.

University of Cincinnati

DANIEL DRAKE Day was held in Cincinnati on May 27, with the University of Cincinnati, Academy of Medicine, Historical and Philosophical Society of Ohio, Public Library and other local groups joining to pay tribute to the self-tutored backwoodsman who revolutionized medical education west of the Alleghenies. The day was prompted by the centennial year of Dr. Drake's death. His amazing career was chronicled at a special convocation of the university.

University of Colorado

The third annual Colorado Intern-Resident Clinics got under way Wednesday, June 4, at Colorado General Hospital. The clinics featured scientific programs conducted by interns

and residents of the university and its 23 affiliated and participating hospitals in Colorado. The two-day program included discussions on hypertensive disease and surgery in cardiac cases, in addition to a program of research papers presented by members of the resident staffs.

Duke University

A four-day postgraduate course in pediatrics began at Duke Hospital and the medical school on Monday, June 16. Physicians from North and South Carolina and Virginia met to study childhood accident problems, epilepsy and other pediatric problems. Guest lecturer for the course was Dr. RALPH V. PLATOU, chairman of the Tulane pediatric department. In addition to lectures, the course included ward rounds and clinic visits.

Three Duke researchers were among 71 recipients throughout the nation who were awarded Public Health Service fellowships for medical research. The grants, totaling \$5,333, were in the fields of biochemistry and physiology. Recipients were: ARTHUR F. DRATZ, Public Health Service fellow in biochemistry; GLEN ROY GALE, Public Health Service fellow in physiology, and IRVING GREEN, research assistant in biochemistry.

Dalhousie University Faculty of Medicine, N.S.

The Faculty of Medicine has received national health grants totaling \$84,693.00, including \$44,900 to Dr. R. O. JONES for the training of graduate physicians in psychiatry, and \$22,000 to Dr. J. S. TYHURST for research in preventive psychiatry. The sum of \$35,000 from the National Research Council, and \$8,000 from the Defense Research Board has been received to support the work of several men in the basic medical sciences. Other grants include Public Health Research grants totaling \$12,490 to Drs. H. B. ATLEE, R. W. REED and C. B. STEWART.

Harvard Medical School

Dr. STANLEY J. SARNOFF, associate professor of physiology, recently received a grant of \$10,000 from Mr. and Mrs. A. M. SONNABEND of Boston to further the treatment and clinical investigation of patients with heart disease, especially cases resulting in acute lung edema.

University of Illinois

The University of Illinois has started construction on a new classroom and laboratory building in the medical center of Chicago's near west side. The six-story structure will make it possible for the College of Medicine—already the largest of the nation's accredited medical schools—to increase its enrollment from 166 to 190 in each class. The College of Pharmacy will be able to increase its registration from 125 to 175 in each class, while the College of Dentistry will enroll 90 in each class instead of 80. Funds totaling \$5,540,000 were appropriated to the University of Illinois a year ago by the 67th General Assembly of Illinois for the construction of the building.

A 12-bed unit for the study of children with psychosomatic problems has been opened by the university. This unit is housed at the Illinois Neuropsychiatric Institute and is to be staffed by the departments of psychiatry and pediatrics. The long-term objective of this program is the study of children with somatic disorders which have a psychological background. The research is receiving support from the Field Foundation, which has granted \$26,000 to be expended over the next two years.

A midwestern cardiovascular center, specializing in the care of children with operable congenital malformations of the heart, was opened at Children's Memorial Hospital on Wednesday, April 30. Funds totaling \$30,000, available on an annual basis, have been allocated by the U. S. Children's Bureau to the University of Illinois Division of Services for Crippled Children for the establishment of the center.

THOMAS S. JONES, professor of medical and dental illustration and head of the illustration studios, returned to the University of Illinois Professional Colleges last month following a visit to 12 medical schools in the



INCREASED enrollment in medical, dental and pharmacy classes will be possible when construction is completed on the new classroom and laboratory building at the University of Illinois medical center, Chicago. The new building will be six stories high.

southeastern section of the United States. Professor Jones visited the schools to hold conferences on visual education. He gave numerous lectures during his trip, which was sponsored jointly by the AAMC and the University of Illinois.

"Golden Apples" have been presented by students to five faculty members. They are Dr. PERCIVAL BAILEY, professor of neurology; Dr. MURRAY FRANKLIN, assistant professor of internal medicine, Dr. C. W. VERMEULEN, associate professor of surgery; Dr. WILLIAM V. WHITEHORN, associate professor of physiology, and Dr. ARNOLD A. ZIMMERMAN, professor of anatomy. Each received a gold key in the shape of an apple. Students annually present these keys, called RAYMOND B. ALLEN Instructorship Awards, to honor excellency in individual instructorship rendered by faculty members to students.

Recent grants: \$37,084 from the Public Health Service over a period of three years to Dr. THEODORE R. SHERROD of the department of pharmacology in support of an investigation of renal hemodynamics; \$9,450 from the same source to Dr. S. HOWARD ARMSTRONG JR. of the department of medicine.

Indiana University

National recognition came to the medical center and Dr. ROY H. BEHNKE, member of the resident staff, recently through his selection by the John and Mary R. Markle Foundation, New York, for a \$30,000 teaching grant over a five-year period.

Approximately 20 county medical societies heard the monthly telephone seminar, Tuesday May 6, which was presented from the auditorium of the School of Medicine by a panel led by Dr. SPRAGUE GARDNER. Participating in the discussion on caesarean sections were Drs. CARL P. HUBER, G. W. GUSTAFSON, C. O. MCCORMICK SR. and D. L. SMITH, all of the faculty, and Dr. R. W. WILKINS of Fort Wayne.

State University of Iowa

Dr. FRANKLIN H. TOP has been named professor and head of hygiene and preventive medicine effective July 1. He succeeds Dr. MILFORD E. BARNES, head of that department since 1930, who reaches retirement age this year.

Dr. JOHN H. RANDALL, professor of obstetrics and gynecology since 1944, has been named head of that department to succeed Dr. E. D. PLASS who has taken a leave of absence because of ill health.

Dr. HENRY B. BULL has been named to succeed Dr. HENRY A. MATTILL as professor and head of biochemistry. Following his retirement, Dr. Mattill will continue his research projects in the field of nutrition.

Dr. CHARLES DAVIDSON MAY succeeds Dr. P. C. JEANS as head of pediatrics this month. Dr. Jeans came to Iowa in 1924 and served as head of the department until his retirement.

Jefferson Medical College of Philadelphia

The campaign for \$4,500,000 for a new 300-bed pavilion at the medical college hospital has brought pledges of approximately \$1,000,000 from the institution's trustees and \$570,000 from its staff. The building campaign now is being developed throughout the Philadelphia area.

Dr. CHARLES F. MCKHANN, former professor of pediatrics of the Western Reserve University, has been appointed as professor of pediatrics and head of the department. Other appointments include: Dr. EDWARD L. BORTZ, associate professor of medicine; Dr. FREDERICK L. HARTMANN, associate professor of medicine; Dr. RUBEN SHARP, assistant professor of medicine; Dr. WILLIAM T. READ JR., assistant professor of pathology.

University of Kansas School of Medicine

Dr. W. CLARKE WESCOE, professor of pharmacy for the past year, has

College News

been appointed dean of the medical school effective July 1. Dr. Wescoe received his M.D. from Cornell in 1944, and interned at New York Hospital the following year. He served as assistant resident at the hospital for another year, then was inducted into the army. He returned to Cornell in 1948 as assistant professor of pharmacy and was a Markle scholar in 1950.

Dr. BYRON T. EBERLE, assistant instructor in the department of physiology, has been awarded a National Heart Institute postgraduate fellowship for research on hardening of the arteries. The award carries a monthly stipend of \$300 plus travel pay, if needed, to study techniques in other laboratories.

Louisiana State University School of Medicine

Dr. MYRON E. WEGMAN, head of the department of pediatrics, has been named to the staff of the Pan-American Sanitary Bureau, regional office of the World Health Organization. Beginning June 1, Dr. Wegman was to take charge of the bureau's newly-created division of education, training and technical services. Dr. Wegman has had wide experience in the fields of maternal and child care, public health administration and medical education. He is a member of the WHO Expert Committee on School Health Services and, as a consultant for the organization, has made comprehensive field surveys in Europe and South America.

College of Medical Evangelists

School of Dentistry Dean M. WEBSTER PRINCE and Dr. ROSS STROMBERG arrived on the Loma Linda campus in mid-June to start operations for the dental education unit.

EDWARD WAGNER, parasitologist of the School of Tropical and Preventive Medicine, was awarded \$8,748 by the U.S. Army to investigate the life cycle of the blood fluke *Schistosoma japoni-*

cum and the biology of its host.

Dr. JOHN PETERSON, formerly head of medical services at Loma Linda Sanitarium and Hospital, was to become head of the department of internal medicine on July 1.

University of Minnesota Medical School

Dr. RICHARD V. EBERT was recently appointed the new Clark professor of medicine at the medical school. Dr. Ebert has been chief of medicine at the Minneapolis Veterans Administration Hospital.

Dr. A. T. RASMUSSEN retired last month after 36 years of distinguished service in the department of anatomy. He will be remembered for his conscientious service as chief examiner, and as one of the most inspiring and competent teachers in the basic sciences.

University of Missouri School of Medicine

Gov. FORREST SMITH recently signed a bill setting up a \$6 million appropriation for the development of a four-year medical school at the university. Signing of the bill by the governor climaxed several years of legislative arguments over the location of the school. The decision of the Board of Curators, which designated Columbia as the location, has been accepted. The university is now in a position to begin expansion of the school, develop blue prints and obtain bids for construction of a teaching hospital, laboratory building and other facilities.

New York Medical College

One-week seminars on the rehabilitation of children are being presented by the postgraduate medical school at the Children's Division of the Institute of Physical Medicine and Rehabilitation. The first was held May 19-23, and the second is scheduled for October 20-24. Talks, observations, lectures and demonstrations give busy practitioners a detailed picture of the

theory and practice of a modern children's rehabilitation service.

University of Oregon

The National Production Authority has given the medical school approval for construction of a \$6 million teaching hospital. Steel and other materials have been allocated from third quarter allotments by the NPA to build the 350-bed structure. The building should be completed late in 1954 or the spring of 1955.

University of Pennsylvania

One of the three units of new medical construction in a multi-million dollar expansion of medical facilities was formally opened last month. The building now in use is a four-story library-kitchen-cafeteria immediately adjoining the university hospital.

Three new faculty appointments in the Graduate School of Medicine were recently announced. They are: Dr. GEORGE B. KOELLE, professor of pharmacology; Dr. CHARLES A. UHLE, professor and chairman of the department of urology; Dr. PAUL V. REID, associate professor of orthodontics and director of the course in orthodontics.

Dr. JULIUS LANE WILSON has been named professor of medicine and director of clinics in the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis.

Dr. R. A. M. BERGMAN, renowned anthropologist from the Royal Dutch Institute for the Tropics, Amsterdam, The Netherlands, has been appointed a visiting lecturer in anatomy.

Dr. DAVID L. DRABKIN, professor and chairman of physiological chemistry in the university's Graduate School of Medicine, went to Europe last month to deliver a series of lectures, sponsored by the U.S. Office of Naval Research, in various continental medical centers. He is a specialist in the metabolism of hemoglobin and related substances and on problems involved in homeostases.

State University of New York, Brooklyn

Dr. CARLYLE JACOBSEN, executive dean of the medical colleges, reports that progress has been made on the planning of the first large unit of the new \$40 million medical center. The unit is a \$14,500,000 science building for which ground will be broken next fall. It will be located opposite Kings County Hospital, Brooklyn.

State University of New York, Syracuse

Dr. GAYLORD W. ANDERSON, president of the American Public Health Association and Mayo professor and director of the school of public health at the University of Minnesota, addressed a workshop for public health nursing at the college of medicine in Syracuse recently. Dr. Anderson selected for his topic, "Basic Training for Career Service in Public Health."

Dr. WALTER S. WIGGINS has been named assistant dean for graduate and postgraduate education.

Saint Louis University

Dr. ERWIN ELLIS NELSON has been named professor of pharmacology and head of the department at the school of medicine.

JOHN WILLIAM COX, graduating senior, received the annual Borden Award for outstanding scientific contribution. His paper discussed studies of the preganglionic inflows and postganglionic vasomotor outflows of the lumbar sympathetic trunk in the dog.

Medical College of South Carolina

The college recently received a tract of 17 acres of land from the Alumni Association for a site for a medical school dormitory. The medical college is now in the process of securing a federal loan to cover only construction. The alumni association is outlining plans to secure additional funds.

University of South Dakota

A clinical clerkship program for sophomore students is being inaugurated this summer in Sioux Falls, with the participating hospitals being McKennan, Sioux Valley and Veterans. The course will extend for one month from June 23 to July 19. Sections of five students each will rotate among the three hospitals for both didactic and ward work under clinical supervision.

Dr. A. K. CARTON has joined the department of anatomy as an associate professor.

Stanford University School of Medicine

The 14th annual postgraduate medical conference will be held in San Francisco from September 15 through 19, in cooperation with the city department of public health and the San Francisco Hospital. Further information may be obtained from the office of the dean.

University of Tennessee School of Medicine

Dr. ALBERT MOORE HAND was to have joined the medical school July 1 as an instructor in the divisions of pediatrics and preventive medicine.

Dr. JOHN L. WOOD, professor of chemistry at Tennessee, was to have become head of the department of biochemistry July 1.

Recent grants: \$15,163 from the Atomic Energy Commission to Dr. R. R. OVERMAN to study the effects of radiation on certain body processes; \$6,966 from the American Cancer Society to Dr. JAMES D. HARDY to study the factors involved in the relationship between a cancer patient's nutritional state and his ability to withstand surgery; \$4,995 from the American Cancer Society to Dr. CHARLES H. EADES JR. to continue his research of the ailment; \$5,500 from the American Cancer Society to Dr. DONALD B. ZILVERSMIT to study the role of phospholipides in fat utilization;

\$6,500 from the same organization to Dr. RICHARD R. OVERMAN to study the relation of adrenal cortical function to cell membrane permeability to metal ions, sodium and potassium.

University of Texas— Medical Branch

A feature of the 64th graduation exercises on June 6 was dedication of the new Gail Borden laboratory building. The building provides library facilities for 100,000 volumes, and laboratory and classroom space for the departments of biochemistry and nutrition, bacteriology and parasitology, physiology and pharmacology.

New dean of the University of Texas Postgraduate School of Medicine is Dr. ROSCOE L. PULLEN, formerly of Tulane.

Tulane University of Louisiana School of Medicine

Dr. GUY A. CALDWELL, professor of orthopedic surgery, has resigned from the chairmanship of the department but will continue in professorial rank. Dr. JACK K. WICKSTROM, associate professor of orthopedic surgery since 1945, has been named chairman.

University of Utah College of Medicine

Dean JOHN Z. BOWERS has spent the past two months on leave of absence as a consultant on health education to the Ford Foundation. Dr. Bowers spent most of the time in India evaluating health and medical problems in the villages of that country to determine the feasibility of a program for health education.

Dr. M. M. WINTROBE, professor and head of the department of medicine, has been named chairman of the advisory council of the Life Insurance Research Fund for 1952-53.

University of Virginia

At commencement exercises June 3, at which 102 new medical doctors

were graduated, it was announced that gifts and grants thus far for the year 1951-52 totaled \$2,843,597. Included was the bequest of \$2,250,000 from the late ADOLPH D. WILLIAMS of Richmond. Interest on about one and one-half million dollars of the bequest is to be used for medical scholarships and fellowships; interest on the balance will be used in the A. D. Williams Memorial Clinic.

The medical college now has under construction the Randolph-Minor Hall, a teaching unit and dormitory for nurses, to be completed this month, and the Wood Memorial Dental School building, to be completed in 1953. Funds are now available for a \$250,000 addition to McGuire Hall and for a hospital for the surgical treatment of Negro tuberculosis patients, to be sponsored jointly with the state board of health.

Washington University

The Mutual Security Agency sent a camera crew to the school of medicine last month to film a motion picture of Thai trainees studying medicine. The movie, to be distributed in Thailand, is concerned with the Washington University-Thailand medical schools teaching assistant program under MSA. All Thais at the medical school participated in the film, which was taken in Barnes Hospital, the eye clinic of McMillan Hospital and Washington University Clinics as well as the medical school. Washington was the first school in the nation to establish a cooperative teaching program under the Marshall plan.

Wayne University

The cornerstone for the new \$4 million medical science building, first unit of a proposed medical center, was laid in May. Foundation work has been completed for seven of the building's eight stories with bricklaying now under way. Construction of the building will enable Wayne to increase its medical school enrollment

by 50 per cent. It is estimated that the structure will be completed in time for the freshman class of 1953.

Woman's Medical College

Recent faculty appointments include: Dr. NICHOLAS B. DRYER, professor of pharmacology and toxicology; Dr. CARMEN THOMAS, director of oncology; Dr. JEAN CRUMP, professor of pediatrics and chairman of the department; Dr. KATHARINE R. BOUCOT, professor of preventive medicine; Dr. EMILIE S. LOEFFLER, teaching fellow in department of medicine; Dr. JOHN B. LEVAN, clinical assistant professor of medicine.

A new plastic surgery clinic under the direction of Dr. ALMA DEA MORANI has been established. Set up primarily for children, treatment also is available for adults. Actual operation of the clinic was made possible through the donation of \$1,000 by the Lions Club.

Yale University

Dr. VERNON W. LIPPARD has been named new dean of the Yale School of Medicine, effective July 1, 1952. The new dean succeeds Dr. C. N. HUGH LONG, who is giving up his administrative duties to spend full time in physiology teaching and research. Dr. Long also will serve as chairman of the department of physiology. Dean Lippard comes to Yale from the University of Virginia, where he has been dean of the department of medicine since 1949.

The graduating seniors at the school of medicine this year reversed the usual procedure and awarded a prize to their most outstanding teacher. He is Dr. GERALD KLATSKIN, associate professor of medicine, who received the first Francis Gilman Blake Award, established by the Yale chapter of Nu Sigma Nu, a medical fraternity. The award is named for the late Dr. Blake, former dean of the school of medicine, who died Feb. 1.

The Personnel Exchange

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school, department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns must reach the Journal office not later than the 10th of the month preceding publication. The deadline for the September issue will be August 7.

All mail should be addressed to: Journal of MEDICAL EDUCATION, 185 N. Wabash Ave., Chicago 1.

Faculty Vacancies

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Applications are invited for the appointment of PROFESSOR OF SURGERY and the CHAIRMAN OF THE DEPARTMENT. This is a full-time appointment. Good salary offered with consulting privileges to provide additional income up to a maximum amount set by arrangement with the university. Further particulars obtainable from the dean, Faculty of Medicine, the *University of Manitoba*, Medical Buildings, Barrington Ave., Winnipeg.

Personnel Available

INTERNIST: Certified, 20 years teaching experience in classroom, clinic and at bedside. Clinical research and administration. 60 publications. General and specialty practice. Seeks teaching opportunity as head of department of medical school, hospital or clinic. Available September 1952. Address: A-13.

M.D. and Ph.D. in PHYSIOLOGY. Just completing training requirements for boards in INTERNAL MEDICINE. Teaching and research experience. Age 33. Family. Desires academic position where basic science and clinical interests in teaching, research and practice may be fulfilled. Joint appointment in medicine and physiology preferred. Address: A-14.

PARASITOLOGIST: Man, Ph.D., married. Assistant professor of medical parasitology at present. Desires position with teaching and research in medical or general parasitology. Minor work in bacteriology or zoology. One and one-half years experience as assistant professor, 2 years graduate teacher, 3½ years Army parasitologist-bacteriologist. Address: A-15.

Man, 36, married. M.S. Ph.D., MICROBIOLOGY, large eastern university. Desires teaching and research, department responsibilities, school of medicine or university. Experience teaching general and medical bacteriology and related

subjects, direction of graduate students. In present position, with school of medicine, 5 years. Will also consider summer session only, 1952. Available June 1, 1952. Address: A-16.

PEDIATRICIAN with academic grade and highly experienced in teaching desires full-time teaching position. Address: A-17.

BACTERIOLOGIST: A.B., M.S. in bacteriology. Two years study toward Ph.D. in PHARMACOLOGY, 2 years research in chemotherapy of parasitic infections. Versed in Warburg techniques. Married, veteran, Sigma Xi, many publications, age 25. Desires position in university as instructor or research associate with or without option for study toward Ph.D. Available July 1952. Address: A-18.

PHYSIOLOGIST, age 30, Ph.D. Experience in medical school teaching and research. Desires teaching and/or research position. Address: A-19.

Certified **INTERNIST**, now assistant professor, 35, desires full-time opportunity to combine teaching, research and clinical work in biochemistry and metabolic disease. Publications. Available July 1, 1952 or later. Address: A-20.

M.S. in GROSS AND MICRO-ANATOMY June 1952. Desire position as research assistant or instructor where graduate courses in anatomy are available. Man,

single, references. Available from summer 1952. Address: A-21.

PHYSIOLOGIST. Age 36. Ph.D., M.A., degrees from outstanding universities. Desires change to medical school with broad research program and/or teaching opportunities in human-medical and general physiology. Extensive training in biochemistry and all phases of physiology and zoology. Experienced teacher; research program in gerontology, former national research council fellow. Available September 1952 or 1953. Address: A-22.

INTERNIST (HEMATOLOGY) - educator. Age 35, certified. Experienced in basic and clinical research, teaching, editing, administration, public relations, clinical consultation, direction of graduate students. Many publications. Capable of directing integrated or specialized research program, administering departmental responsibilities and/or hospital training program. In present situation at large mid-western college of medicine past 7½ years. Research and professional societies. Desires academic position where basic science and interests in teaching, research, organization and administration may be fulfilled. Available January 1, 1953. Highest references. Address: A-23.

M.A. in LIBRARY SCIENCE in August, also R.N., wishes to set up a program of bibliotherapy in mental hospital. Available October 1, 1952. Address: A-24.

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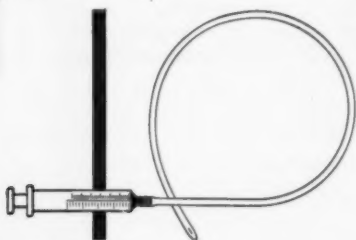
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